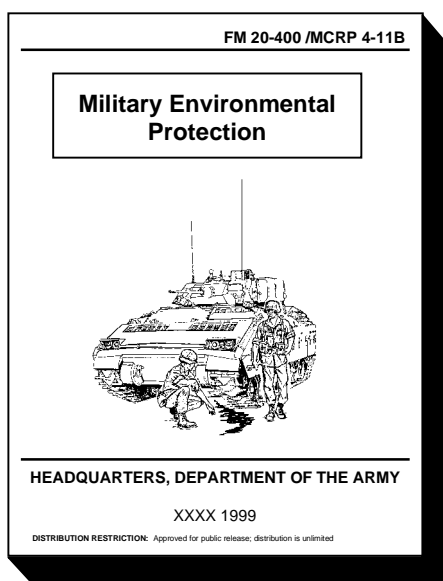




NEWSLETTER

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Integrating Military Environmental Protection

Techniques and Procedures for Military Environmental Protection

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FOREWORD

Military Environmental Protection is a practice that leaders and soldiers are quickly accepting as they begin to understand the relationship between military environmental protection and success on the battlefield. That "battlefield" may be training at Home Station, a rotation at one of the CTCs, a contingency operation such as the one ongoing in Bosnia-Herzegovina and surrounding areas, or total war. Why is *Military Environmental Protection* important to you as a leader? Because, first and foremost, it is good for you and the troops you lead. Also significant is the fact that Army senior leadership, both military and civilian, has directed us to adopt it as part of our ethics and the way we do business. Third, a growing body of laws and regulations (similar to areas such as force protection and the Law of Land Warfare) compel our participation. Finally, failure to properly apply environmental considerations costs money, money that is needed at Home Station to support the OPTEMPO. A reduced OPTEMPO reduces a unit's ability to train and maintain its readiness. The end result is the risk that our soldiers will be unprepared for the missions they will face. We as leaders cannot allow that to occur.

Military Environmental Protection is the application and **integration** of all aspects of natural environmental considerations as they apply to the conduct of military operations. This definition is included in **FM 20-400/MCRP 4-11B, *Military Environmental Protection***, a manual that will become familiar to all leaders. (The additional number designation of MCRP 4-11B for the field manual is added because the Marine Corps has teamed with the Army to create this multi-service manual. The manual is scheduled to be published in the near future.) It is no mistake that the word "military" is the first word in the term. The protection piece of the term applies first to you and your soldiers and concurrently to the environment in which you live, train, or fight.

"Everyone must protect and conserve the natural environment as an individual responsibility. Seemingly minor infractions by individuals, particularly in cumulative effect, can have major effects on human health and natural habitat—or upon operating budgets. Leaders must set the example as well as to strictly enforce environmental policy and regulations. Environmental responsibility involves all of us. The environmental ethic must be part of how we live and how we train."

General Dennis Reimer, 1995, Chief of Staff, US Army

Your role as a leader should be ethically and legally clear. The specifics of *Military Environmental Protection* will come as you develop your knowledge in this area of expertise. This newsletter is intended to assist you by looking at techniques and procedures as well as insights into emerging doctrine on the application of *Military Environmental Protection*.

MICHAEL A. HIEMSTRA
COL, FA
Director, Center for Army Lessons Learned



Integrating Military Environmental Protection

TABLE OF CONTENTS	PAGE
Section I: Introduction	1
Section II: Military Environmental Protection	3
Section III: Techniques and Procedures	4
Section IV: DTLOMS Integration	20
Section V: Summary	27
Appendix A: OJE Hazardous Waste Generation	A-1
Appendix B: The Life of a Base Camp	B-1
Appendix C: NTC Spill Residue Costs	C-1
Appendix D: Alaska - Story of a Spill	D-1
Appendix E: Spill Response Plan	E-1
Appendix F: References and Resources	F-1

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SECTION I: INTRODUCTION

"The only thing harder than getting a new idea into the military mind, is getting an old one out."

B.H. Liddell Hart

The military's primary mission is to win this nation's wars through the application of overwhelming combat power. Warfare, by its very nature, is destructive to humans and their natural environment. Environmental damage is a consequence of combat. However, the commander in the field is often required to restrict the application of force. He must conform to the law of land warfare: those written and unwritten conventions and customs that protect against unnecessary suffering and facilitate the restoration of peace. The commander is, with increasing frequency, constrained by mission requirements that may restrict the use of much of the combat power inherent in his organization.

This newsletter is written for you, the leader. All leaders must be familiar with the application of *Military Environmental Protection*. It is fairly easy to articulate a leader's application of *Military Environmental Protection* during the two extremes of peacetime and war. In peacetime, the general guidance is to follow the rules and regulations that exist and listen to your environmental experts at the installation level. Your unit environmental compliance officer (ECO), as directed in AR 200-1, will be instrumental in assisting you as well. There will be few exceptions to the rules, whether you are based in CONUS or OCONUS. This is easy to say, but more difficult to do. In the midst of war, *Military Environmental Protection* tends to be less important in the short term and is less discreetly applied by the commander due to other more competitive demands and risk considerations.

The real challenge is to articulate a set of standards for the leader to apply in the "in between" cases associated with military operations other than war (MOOTW). This is the real "gray" area for its application (even though the principles will remain constant) because each situation is different and changes over time. The specific application of *Military Environmental Protection* will vary as well. The Bosnia lessons (techniques and procedures) provide a good thought piece for this type of mission, one of many possible contingency operations.

Today our Combat Training Centers (CTCs) tend to address *Military Environmental Protection* as a "white force" or administrative issue. While major pieces of *Military Environmental Protection* clearly lie in administrative areas, what is lacking is the application and integration of the tactical and operational piece. This is not to suggest that there should never be a decision made to use the "white force" rather than the unit to take care of a situation in the interest of optimizing the player unit time for other warfighting skills that are only trainable at the CTCs. These and other similar "balance" questions in other areas must always be considered. All of the CTCs have excellent and growing Integrated Training Area Management (ITAM) programs and clearly take them very seriously. Doctrinal integration of *Military Environmental Protection*, however, is not being taught. Operation Plans (OPLANs) or Operation Orders (OPORDs) do not contain an environmental appendix as directed in FM 101-5. Without an environmental appendix from the Operations Group (as the higher headquarters), it is little wonder that maneuver brigade and task force (TF) commanders are not including this appendix in their respective OPLAN or OPORD. The Battle Command Training Program (BCTP) shares this same deficiency at its level. They too should include an environmental appendix (or annex) in the higher headquarters OPORD or OPLAN that

is provided to the training unit. Environmental considerations and guidance comes from higher headquarters, and in most cases today, articulation of these considerations really begins in OPLANs and OPORDs at the CINC level. Environmental considerations also reside in good unit standing operating procedures (SOPs) (at all echelons) that include applicable portions of *Military Environmental Protection*. *Military Environmental Protection* can be accomplished if we train as we fight, and as we conduct contingency and combat operations. It applies across the entire spectrum of conflict.

Key to any leader discussion on *Military Environmental Protection* is **FM 20-400/MCRP 4-11B, *Military Environmental Protection***. This doctrinal manual is scheduled to be published in the near future to provide leaders with the guidance necessary to integrate environmental considerations. In the interim, copies of the final draft of the manual were sent to the field. (The final draft can also be viewed and downloaded from the web at http://www.wood.army.mil/ENVIRON/en_hp.htm.) Leaders are also encouraged to read the current versions of **FM 101-5, *Staff Organization and Operations***; **FM 101-5-1/MCRP 5-2A, *Operational Terms and Graphics***; **FM 100-14, *Risk Management***; and **FM 101-5-2, *U.S. Army Reports and Message Formats***. Each of these manuals has already integrated the principles of *Military Environmental Protection* as they apply to the military decision-making process (MDMP), battle focused training, standardized reports, and risk management.

SECTION II: MILITARY ENVIRONMENTAL PROTECTION

"Environmental protection must be treated as you would any other mission. Make environmental considerations integral to all operations and decisions. Commit sound stewardship of Army lands and protect the environment."

General William Hartzog

Military Environmental Protection is the application and **integration** of all aspects of natural environmental considerations as they apply to the conduct of military operations. While many of the environmental terms internal to *Military Environmental Protection* are included in FM 101-5-1, you will not find the above definition in the field manual. This definition covers a range of issues that apply to the military. In most cases subordinate terms are exactly as articulated in the civilian community and allow us to speak a common language. However, because our focus is broader (and at the same time more focused) than the civilian community, it is essential that the military can relate special needs and considerations.

A key word is integration. The intent is to draw a parallel between civilian and military considerations of *Environmental Protection*. Thus, many considerations can fit into existing procedures already in use by the Army and Marine Corps.

Integration between civilian and military application of *Environmental Protection* is essential, and FM 20-400/MCRP 4-11B devotes a major portion of the manual to demonstrate how integration can be relatively seamless. There are new items to consider, but there are not any new processes. We are talking about a natural evolution of our existing processes, not a revolution. The concept must become second nature for each of us. *Military Environmental Protection* is not another system or separate process, but rather an integrated piece of an existing process. Linking good environmental actions to sound tactical doctrine and tactics, techniques, and procedures (TTP) can and should be a standard procedure. Environmental considerations will, in many cases, reinforce or amplify sound tactical principles and issues of force protection that we already accept as doctrine or TTP for other reasons. It is tied directly to risk management. Risk management is a part of the protection template that consists of all means, methods, and procedures taken to conserve the fighting potential of a force. Environmental protection is an enabling element for you, the commander, and as such, an essential part of military operations.

One should not become confused with other uses of the term "environment." These include discussion of the weather or discussion of intelligence preparation of the battlefield (IPB) when we identify that the population of the region we are about to enter will provide a friendly or hostile "environment." These are some of the other valid uses of the term and important information, but they are not a part of *Military Environmental Protection*.

SECTION III: TECHNIQUES AND PROCEDURES

"The American people will continue to expect us to win in any engagement, but they will also expect us to be more efficient in protecting lives and resources while accomplishing the mission successfully. Commanders will be expected to reduce the costs and adverse effects of military operations, from environmental disruption in training to collateral damage in combat."

Joint Vision 2010

This section is a composite of techniques and procedures from the field, especially by units supporting or taking part in the operations in Bosnia-Herzegovina during Operation JOINT ENDEAVOR (OJE), Operation JOINT GUARD (OJG), and the ongoing Operation JOINT FORGE (OJF). These lessons are grouped in an effort to relate them to the phases of force projection (training, mobilization, deployment, operations, redeployment, demobilization). The majority of the techniques and procedures focus on the tough issues that occur when applying *Military Environmental Protection* during contingency operations.

TRAINING

TOPIC: TACTICAL APPLICATION OF MILITARY ENVIRONMENTAL PROTECTION

DISCUSSION: None of the operations groups at the three "dirt" CTCs or at BCTP include an environmental appendix or annex in the orders they provide units undergoing training. Where environmental considerations are included is primarily in the respective ITAM programs at the three maneuver installations. These programs are generally excellent, but by their very nature they are not tactically related. In all cases, *Military Environmental Protection* is considered as a "white force," base operations, or administrative requirement imposed on tactical play, not as an integrated tactical consideration. FM 101-5 already identifies the requirement for tactical integration, and the soon-to-be released FM 20-400/MCRP 4-11B lays out the doctrine, providing examples of an environmental appendix, annex, and a general framework for a unit SOP.

TECHNIQUES AND PROCEDURES: The Engineer school, the executive agent for *Military Environmental Protection* for TRADOC and the Army, has not yet provided the CTCs with commander's critical information requirements (CCIR) to collect against and build a database of environmental protection techniques and procedures. With the production of FM 20-400/MCRP 4-11B and the integration of *Military Environmental Protection* considerations into key manuals and documents such as FM 101-5, FM 101-5-1, FM 100-14, and others, there is now a doctrinal framework for its application in the field and at training centers. With this information, trends can be identified and we can begin addressing trend reversal and, ultimately, the correct tactical application of *Military Environmental Protection* across the Army.

TOPIC: THE COST OF HAZARDOUS WASTE (HW) REMOVAL

DISCUSSION: Hazardous waste removal costs money. This expenditure ultimately affects the cost of training and reduces money available for other aspects of training. The overall cost is often excessive and primarily

caused by improper collection and disposal procedures. Mixing HW with other materials makes it all HW. Using a bucket-loader or small equipment excavator (SEE) for convenience to dig up more soil than was contaminated may cause you to remove 10 or 20 times more soil than is required. This would be a mark of improper training, knowledge, or discipline.

TECHNIQUES AND PROCEDURES: Use shovels where you can to minimize what will become contaminated soil for turn-in. Proper procedures show proper care for the environment, allow the Army to cut costs significantly, and prevent future financial liability. (See Appendix C for an example of the spill residue associated with rotations at the National Training Center.)

PRE-DEPLOYMENT

TOPIC: ENVIRONMENTAL AUTHORITY (Environmental stewardship starts at the top)

DISCUSSION: Each of us has environmental authority, just as each of us has safety authority. If a soldier sees an unsafe act, it is his responsibility to correct it, or at least bring it to his leader's attention. The same is true with actions that are environmentally unsound. A commander may decide to take a risk in either of these areas, but that should be a considered decision and not one of omission. Clearly articulating which commander at what level has responsibility for making specific environmental decisions (as well as safety decisions) needs to be done early in the planning process. This designation of authority must also be reviewed periodically to ensure that decisions or a particular variant of risk are being made at the appropriate level.

TECHNIQUES AND PROCEDURES: In the case of operations in Bosnia-Herzegovina, the designation of authority was given to the commander USAREUR, with a tasking to serve as the environmental executive agent (EEA). This ensured a consistent and balanced policy throughout the operation which met national policy and yet had a minimal restraining effect on operations at the lowest levels. Although the role and responsibilities of the EEA were not clearly defined in the early stages of the operation, USAREUR quickly responded by developing and coordinating the Theater Environmental Policy and by establishing environmental standards and procedures for all U.S. forces in Operation JOINT ENDEAVOR.

TOPIC: INTEGRATE ENVIRONMENTAL CONSIDERATIONS AT THE EARLIEST POSSIBLE OPPORTUNITY

DISCUSSION: FM 101-5 identifies the requirement for an Appendix 2 (Environmental Considerations) in Annex F (ENGINEER) of an OPLAN or OPORD. In a joint OPLAN or OPORD this was elevated to a separate annex (Annex L). (Examples of the appendix and annex formats are provided in FM 20-400/MCRP 4-11B.) While it is an engineer's responsibility to write this appendix, the engineer is only one of several staff officers with key responsibility for the integration of *Military Environmental Protection*. The engineer has a primary integrating role in the process.

TECHNIQUES AND PROCEDURES: The S2/G2/J2 has responsibility for collating IPB, but is not the only provider of material for the IPB. In a similar fashion, the engineer is the key staff officer responsible for planning for *Military Environmental Protection*. FM 101-5 identifies the S1/G1, S3/G3, S4/G4, S5/G5, the surgeon, the chemical officer, the safety officer, the PAO, and the SJA as staff officers having specific involvement in integrating aspects of *Military Environmental Protection*. Each staff officer has a role to include environmental considerations in their analysis. The goal is to allow the command to take preventive measures. These considerations must be applied early in the process to ensure their inclusion in the OPLAN/OPORD and must be updated by each member of the staff throughout the phases of an operation.

The OPLAN/OPORD must be conceived and developed in coordination/consultation with higher levels of command and synchronized with life support and sustainment plans. Staff integration is absolutely critical, and plans must be fully staffed or they will not be well developed to meet the needs of the operation.

A related lesson from OJE reflected that medical intelligence did not include non-medical environmental or health threats in their analysis. It is vital that preventive medicine personnel and medical planners anticipate potential areas of concern for the area of operations (AO) in the contingency. Real-time information must be passed to DOD intelligence agencies to focus collection efforts. For example, areas such as the coke plant at the Camp Punxsatawney location and the chlorine plant near Tuzla should have been included in medical intelligence reports as environmental threats. The Armed Forces Medical Intelligence Center (AFMIC) Medical Environmental Disease Intelligence and Countermeasures (MEDIC) is a good source to provide applicable information (which is available on CD) for planning purposes. AFMIC needs to expand their intelligence products to include specific non-medical, environmental, or health threats as well.

TOPIC: STANDING OPERATING PROCEDURES (SOPs)

DISCUSSION: "Train as you fight" includes the requirement to have useful and appropriate SOPs at all unit levels. Many of the aspects of *Military Environmental Protection* rightly belong in unit or installation SOPs. There are tactical applications for much of what has been thought of as merely "white force" or installation requirements and regulations. While a given contingency or operation may alter some of the standards, the SOP still provides a starting point for normalcy and institutes a proper environmental ethic within an organization. FM 20-400/MCRP 4-11B provides a generic SOP that can be copied and adjusted to reflect the peculiarities of a specific location. Whether you use this SOP or develop another one from other sources, it is critical that you consult with your installation's (CONUS or OCONUS) environmental staff if it is modified. Review the SOP prior to deployment to other training areas or contingency operations, updating it to ensure that information or guidance from higher headquarters is current and focused for the specific area in which you are operating.

TECHNIQUES AND PROCEDURES: Many of the preventive medicine practices in the SOP are standardized and not new. These are major pieces to *Military Environmental Protection*. Similarly, the linkage between safety issues and environmental considerations is also strong. Soldier safety is not a new concept, and although some of the environmental considerations are new, most are already imbedded in good leadership skills and the way the Army does business. Elements of *Military Environmental Protection* are definitely a part of safety and preventive medicine. The key lesson is that *Military Environmental Protection* needs to be trained and internalized. Only then will the Army be successful at implementing those elements of *Military Environmental Protection*.

Dealing with spills is a significant issue for mechanized or motorized elements. Foot mobile elements also have this concern, although it is certainly more remote. The "YOU SPILL, YOU DIG!" series of materials (see below) was prepared by USAREUR to focus on spills due to the failure of including spill consideration in unit SOPs and the failure to address it in doctrinal material. Written plans and SOPs for spills and spill prevention must be written and internalized by units prior to deployment. These SOP items are necessary for all operations, to include local training areas, motor pool operations, and other locations where a unit may operate.

TOPIC: STAFF KNOWLEDGE OF THE AREA OF OPERATIONS (AO)

DISCUSSION: More planning is needed to identify the environmental laws, regulations, and structures within the country where the contingency is taking place, as well as any of the adjacent countries through which we, or our materials, must transit. The OPLAN on the shelf must reflect this information. If this information is not collected early in the planning process, units will not be prepared when the OPLAN turns into an OPORD.

TECHNIQUES AND PROCEDURES: During OJE, a significant amount of time was spent trying to determine the standards under which U.S. forces were legally operating in Bosnia, as well as surrounding areas within the AO, such as Hungary and Croatia. This made defining standards for *Military Environmental Protection* difficult and led to confusion early in the operation. Perhaps the greatest confusion was in attempting to deal with the hazardous waste that our forces generated. A small book could be written on the challenges associated with hazardous waste removal and the impact of the Basel Convention (a convention that the United States is a signatory to, but which Congress has not ratified). As with other aspects of the IPB, this information is critical to planning and to the ultimate operation. Although an environmental consideration may not be a tactical consideration, it may still have a dramatic effect on tactical operations and the ability to execute them.

The information surrounding site selection is a very critical piece of the planning process for a contingency operation. If initial staff work fails to identify likely sites and obtain information about sites in this phase, it increases the likelihood that poor or even unacceptable sites will be hastily chosen. A map analysis is inadequate for confirming the quality of a potential site. Unfortunately, map analysis was the standard used for much of the initial site selection during OJE.

TOPIC: ENVIRONMENTAL TRAINING/AWARENESS

DISCUSSION: Training at all levels of the military is essential to raise both the individual and collective levels of our environmental awareness and to ensure the proper handling of hazardous waste and spill procedures. USAREUR published three documents in an effort to correct shortfalls in knowledge and training. The title of this education campaign is "YOU SPILL, YOU DIG!" and includes a videotape and two pocket-sized products--a fold-out flash card and an environmental handbook. The campaign focuses on prevention and response for the handling of spills and hazardous wastes and on building the requisite level of training for both soldier and leader awareness. The Army needs to be diligent in training its soldiers and leaders in the area of hazardous waste and spill procedures.

TECHNIQUES AND PROCEDURES: This is not just a USAREUR-peculiar problem. TRADOC has instituted a variety of fixes to bring this and other basic environmental training into our school houses and at all levels of military education throughout the Army. (For a more in-depth discussion of these initiatives across the DTLOMS, refer to Section IV of this newsletter.)

MOBILIZATION

TOPIC: ENVIRONMENTAL STEWARDSHIP

DISCUSSION: Environmental stewardship (a major component of *Military Environmental Protection*), like everything else in a unit, must start at the top. Leader involvement and guidance is key. General Reimer and the civilian leadership of the Army have made it clear that they expect soldiers to be good environmental stewards. Leaders have the responsibility to promote that stewardship to soldiers through personal example and in the documents the Army produces. This translates into commander's guidance at all levels of OPLANs and OPORDs that articulate the specific levels of that stewardship for any military operation. A critical factor is to articulate the appropriate level(s) of *Military Environmental Protection* given the particular nature of the operation. This is not a constant. Application of *Military Environmental Protection* in a given contingency operation will almost certainly be different from its application in the midst of close combat during war. This higher commander's guidance is not typically something that can be initiated by commanders at lower levels such as brigade or task force. Higher-echelon commanders and their staffs (or installations) must be the initiators of this guidance. Given the linkage

between the political and the military at the CINC level, it appears that this may be the vital echelon for initiating and defining what that guidance will be for any given contingency operation.

TECHNIQUES AND PROCEDURES: In the case of OJE, the EUCOM OPLAN included an environmental annex. This annex created the framework for environmental guidance to include establishing responsible parties. The CINCUSAREUR was designated as the executive agent (EA) for environmental actions associated with OJE, with delegated approval authority for spill mitigation and contaminated site remedial issues passed to USAREUR (forward) ODCSENG. Additional technical guidance was also provided in the OPLAN. This ensured a consistent and balanced policy throughout the operation that met national policy and yet had a minimal restraining effect on operations at the lowest levels. Early designation of authority and planning guidance is absolutely critical to success.

TOPIC: SITE SELECTION

DISCUSSION: Site selection success begins in the planning phase. Identification of potential sites and an initial analysis of the sites, with all of the tools available to the staff, is critical for success. The information surrounding site selection is an important part of the planning process for a contingency operation.

TECHNIQUES AND PROCEDURES: Once physical reconnaissance of the site is possible, it is important to deploy an engineer and other experts on the ground to confirm usability of the site. This must be accomplished before the decision-making cycle has gone so far that site selection cannot be altered, or the siting of the camp cannot be adjusted to take advantage of the information gained during the reconnaissance. Accomplishing this will pay for itself many times over in the life of a base camp. A poorly chosen and sited base camp is like a poorly framed house. You can put a lot of money into trying to fix it, but it will never be right. As incredible as it may seem, engineers were not involved in the site selection and layout of all the base camps in OJE. Engineer support was requested only after the base camp was confronted with problems.



Location (siting) decisions must include a full range of force protection considerations and all of the potential risks involved with those decisions. There may also be political considerations, but most of these should be identified during the planning phase. Environmental considerations, to include preventive medicine issues, are critical pieces to integrate into location decisions. The internal siting of a base camp should start from a generic template (just like the template for a tactical assembly area) that identifies the relational positioning of maintenance areas to dining facility areas.

The emerging doctrine in **FM 42-424, Force Provider Company**, provides some recommendations and insights for site planning and layout. Although focused on the force provider packages, it is still valid for general design and layout work. Relationships between base camp planning, placement, and construction are critical to the layout and ultimate success of the camp. Evaluating the effects of the site using these subsystems will help in making the decision about whether a site meets the intended and projected needs. The planning factors for the duration (life) of a given base camp are important. Does the base camp have the potential and likelihood to be expanded over time? Contracting considerations (cost) will also be an important factor, but will rarely be the defining factor in the decision.

The competing demands between force protection issues, political and contracting realities, and tactical concerns and considerations may force the commander, in some cases, to get less than the optimum solution in each of the areas. Risk management must be applied. Good staff work ensures that base camp decisions are ultimately informed decisions made by the commander and not final imposed decisions.

TOPIC: SPILL RESPONSE CONTRACTS AND PLANS

DISCUSSION: Spill response contracts and plans need to be developed prior to deployment so that units can react quickly during the initial stages of deployment. Regardless of preventive actions taken, spills will occur. While the first responsibility for spill response always belongs to the unit, the size of some spills or the follow-up work will probably require outside assistance.

TECHNIQUES AND PROCEDURES: In the case of OJE, comprehensive emergency spill response contracts were not in place until four months into the operation. Prior to their establishment, spills were handled on an individual basis. This resulted in more complicated contracting mechanisms and greater clean-up costs. Regardless of who is providing the personnel and assets to implement the handling of spills (civilian contractor or the military), a contingency plan should be in place in case the preferred method fails. Events may restrict the ability of the contractor or the military to respond to a given spill. Examples may include force protection rules that require four military vehicle elements for any movement, or a hostile environment which prohibits the contractor to enter in a timely manner. **Rapid** spill response reduces clean-up costs and future liability. Untreated spills do not "go away" or get better with time; they only get worse and become a public affairs concern.

The planning for spill response contracts and their integration into plans is identified in FM 101-5 as a logistics responsibility. The engineer on the staff will frequently be involved, but the logistician (S4/G4) is responsible for "coordinating unit spill prevention plans." This is an intelligent linkage of responsibility, since the logistician is also responsible for "coordinating the transportation, storage, handling, and disposal of hazardous material and hazardous waste." The engineer (ENCOORD) works under the operations side of the staff (S3/G3). At the J-staff level the engineer works under the logistics side of the staff. EUCOM (J-staff) correctly gave this responsibility to the engineer section as a part of the J4. However, as the responsibility went down to lower levels of command, the logisticians failed to handle the mission, leaving the mission to the engineer. Logisticians must stay involved and be the overall coordinators for their areas of responsibility at all echelons of command. The engineer must remain heavily involved and solve problems at lower levels along with the logistician.

TOPIC: INTEGRATION OF SPILL RESPONSE DUTIES INTO THE HW MANAGEMENT PROGRAM

DISCUSSION: Integrating the spill response duties into the HW management program reduces operational costs and increases military effectiveness. As a logistical responsibility, it is probably the preferred solution to contract spill response duties. This will free military manpower to focus on other issues. The cap on military manpower to support operations in Bosnia made it not only preferable, but absolutely essential to contract these requirements. As with any other contract, adequate lead-time to bring these contracts on-line at the beginning of the operation is necessary. The Logistics Civilian Augmentation Program (LOGCAP) is a valuable tool to ensuring this will occur.

TECHNIQUES AND PROCEDURES: While spill response is a full-time requirement, elements that are to perform the mission of spill response are not used to their full extent. Generally, there will be a great deal of down time between spill responses. It makes good sense to integrate the spill response duties (contracted services or

otherwise) into the HW management program. Typically, the same personnel can perform both sets of duties. This not only reduces operational costs, but in many cases increases the effectiveness and responsiveness to spills.

TOPIC: PREVENTIVE MEDICINE DETACHMENT

DISCUSSION: Preventive medicine detachments are not equipped, staffed, or trained to perform environmental monitoring and sampling. Preventive medicine personnel must recognize the need and then plan for and perform environmental sampling during the initial phase of the deployment. They must be trained to recognize environmental hazards, know the necessary sampling procedures, and effectively interpret the results. Preventive medicine detachments should be equipped and trained with simplified environmental monitoring equipment to identify environmental risks of a site, to include industrial hazards. Knowing the linkage to other capabilities (such as the mobile mass spectrometer with its "industrial or environmental" chip on the M93 Fox vehicle) will also enhance their capabilities. The training of personnel should also include how to integrate these results into the staff recommendation for a particular site. This training should be incorporated into basic MOS training for the 91S and 72D/E and into officer training. In addition, **FM 8-250, *Preventive Medicine Specialist***, is outdated and should be updated or replaced.

TECHNIQUES AND PROCEDURES: While the expertise to perform environmental monitoring and sampling lies in the medical community, the equipment and trained individuals to perform those functions are not currently internal to the preventive medicine detachments. Additionally, there is no policy, doctrine, or process for environmental monitoring during a contingency operation. Efforts to correct environmental monitoring during OJE/OJG/OJF should provide solutions. The lack of a database or centralized management of monitoring results hinders the use of monitoring information.

TOPIC: HOST NATION ENVIRONMENTAL SUPPORT

DISCUSSION: The level of environmental awareness within a country will impact the level of environmental expertise that can be provided by local contractors. In the case of OJE, it was impossible to contract for all services with host nation firms. The firms simply did not exist, and the damage that had been done to the countryside by the conflict meant that the level of environmental awareness was low.

TECHNIQUES AND PROCEDURES: Other contingencies may allow for the contracting of host nation organizations capable of dealing with HW internally to that nation. However, the standard will probably be otherwise, due to either the low industrial/technological level of the nation involved, low environmental awareness in the country, or the results of conflict that will not permit the handling of HW completely within the confines of the nation in question.

TOPIC: IFOR/SFOR ENVIRONMENTAL STANDARDS AND ETHICS

DISCUSSION: Do not assume that all of the nations in a given coalition have the same standards and ethical position on the care of the environment as the United States. It would be helpful to operations if the coalition OPLAN/OPORD also contained an environmental annex or appendix, but this will not always be the case. It is difficult for you to maintain preventive medicine standards, for example, when one of the coalition partner units is contaminating the watershed of the area you are using as a base camp. It is critical to convince coalition partners to at least meet the minimum standards of environmental consciousness.

One story that highlights the problems involved with this issue has to do with a U.S. unit inheriting a base camp that had previously been occupied by a former Soviet Bloc nation. The base camp had its own set of problems, but the real environmental issue and danger came from the adjacent base camp of another nation. There was a "yellow ooze" trickling from the base camp that irritated the skin of an American soldier at the U.S. camp -- some nasty stuff, but the sort of thing to be expected when there are no environmental standards. It is critical to establish base line environmental standards in any coalition in which the United States is involved.

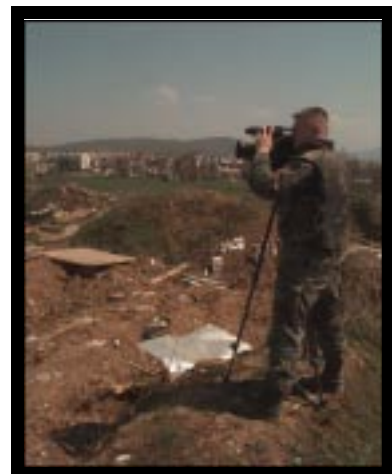
TECHNIQUES AND PROCEDURES: Selecting a site to occupy that had been previously used by other IFOR/SFOR nations proved to be a poor decision in some cases during OJE/OJG. The failure to anticipate the conditions of the site or perform a reconnaissance (with a corresponding initial environmental baseline survey) as part of the handover process meant that commanders were once again faced with a reactive situation. In some cases, it would have been better to relocate to avoid the site and start from scratch with a new base camp. This option will not always be available, or you may be required to share a base camp with another nation whose standards are not similar to yours. These issues must be resolved early on at the highest levels to ensure the standards are within the bounds of acceptability.

DEPLOYMENT

TOPIC: INITIAL ENVIRONMENTAL BASELINE SURVEYS (EBSs)

DISCUSSION: The discussion of the initial EBS is an important one that affects all echelons involved in an operation, either directly or indirectly. An EBS is a focused environmental protection report using the principles of an area reconnaissance. When you think of an EBS, you should automatically apply the principles of reconnaissance. As a "snapshot in time," it documents the condition of a site prior to occupation by forces and serves as a tool to assist in determining whether the site is acceptable for military use. It has two primary functions. The first function is foremost in the mind of the commander: ensure that troops are not placed in an unhealthy or unsafe location. The second function is to avoid potential financial liabilities against the U.S. after departure from the location.

TECHNIQUES AND PROCEDURES: The composition of the reconnaissance force is critical to the success of the survey. This is no different than the special focus applied when a chemical or engineer reconnaissance of an area is performed. The principles of reconnaissance remain constant, only the focus changes. With the change of focus comes the requirement for special capabilities and competencies within the



reconnaissance element. In the case of an environmental reconnaissance (performing an EBS), special skills include engineering skills, preventive medicine capabilities, contracting skills, knowledge of hazardous materials, and other environmental considerations. Both preventive medicine (which must deploy early) and engineer expertise (to include Corps Real Estate Support Teams [CREST]) must be consulted before site selection approval occurs. Both should be involved in the initial EBS and as a part of the environmental reconnaissance team performing the survey. Ideally, the team will also include representation from the unit who will occupy the site. This will allow the unit to perform many of the responsibilities associated with quartering party operations. If contractors are used for this mission, they must have the same capabilities present in the environmental reconnaissance team they employ. Ideally, the reconnaissance team will be made up of military specialties. It may also have contractor representation if the contractor who will perform key services at that site is known. The use of a camera to photograph the site will provide an excellent addition to the initial EBS packet.

Fast track environmental baseline surveys, using contracted reconnaissance, were an initial method of identifying potential hazards and reducing U.S. liability during OJE. These surveys documented environmental conditions during the initial occupancy of the property to determine overt health hazards and prevent the U.S. from receiving unfounded claims for environmental damages. Most of the properties surveyed contained no significant environmental or related health problems, but this was more luck than design. Additionally, fast track EBSs did not provide a tactical evaluation on force protection issues associated with the site. At those sites where potential or real problems were identified, recommendations were made to correct the problems or avoid use of the site. While these types of surveys were helpful and necessary given restrictions on the use of troops, they were incomplete and lacked adequate preventive medicine considerations or force protection assessments. The lack of military engineer expertise in these elements caused some camps to be poorly sited from an engineering and tactical point of view.

The use of a two-phased approach for conducting initial baseline surveys became necessary during OJE due to constraints on time and other considerations. These considerations included limitations imposed by manpower caps that did not allow employment of all desired military personnel, and force protection restrictions that made it easier to use contracted rather than military personnel, in some cases, to accomplish the mission. The Phase I investigation (fast track) was designed to provide an initial overview of the property using real-time sampling equipment. The Phase II investigation, performed only when the Phase I investigation indicated the potential for a significant health or environmental hazard, involved a more comprehensive analysis that was used to quantify an identified hazard and to develop exposure and liability mitigation strategies. Given the constraints, this method was clearly better than no EBS. The reality is that it was an abbreviated and otherwise unsatisfactory solution that only became necessary when proper planning, preparation, and execution were not accomplished.



TOPIC: BASE CAMP DESIGN/POSITIONING

DISCUSSION: Doctrine for the design of base camps is weak. Site selection is the first element of base camp design, and it was generally less than ideal during OJE. Reasons for this included a tendency to base decisions on where to position base camps primarily on map analysis and, in some cases, on incomplete or faulty reconnaissance. This was linked to incomplete EBS reconnaissance team reporting (if this was even available in the planning stage), time constraints, snow-covered terrain, the potential presence of mines, and a lack of general engineering input or considerations. Failure to include engineers and preventive medicine personnel in the initial decision-making process doomed several of the base camps to failure before the first unit occupied them. Insights to base camp design are offered in **FM 42-424, Force Provider Company**.

TECHNIQUES AND PROCEDURES: A better primer or planning guide for the design, construction, and sustainment of base camps must be developed. This must be an integrated product that includes general engineering considerations, field sanitation consideration, force protection concerns, and environmental-related considerations. The application of this guide, coupled with a good EBS and reconnaissance of the prospective site, can minimize or perhaps even eliminate poor decisions on the design and positioning of base camps.

An additional aspect of base camp design is the construction standard for the theater of operations (TO). Will the standard be "initial standard" (up to 6 months of expected use), "temporary standard" (up to 24 months of expected use), or some longer period? In the case of OJE, temporary standards were applied. This worked well for OJE until OJE became Operation Joint Guard (OJG). We are now in the Operation Joint Forge (OJF) phase of a continuing operation and have exceeded the 24 months of expected use. In almost all cases it has become necessary, as well as desirable, to upgrade base camps and their facilities to enhance the quality of life. Unfortunately, infrastructure decisions on bridges, roads, and other critical line of communication elements are now beginning to be felt, given the decision to only design for the temporary standard. The political guidance that drove early decisions has changed over time as the contingency continues. From an environmental set of standards, this means that we are now forced to begin thinking about such items as waste treatment plant extensions and other infrastructure development considerations. Good guidance and planning assumptions are critical to the success of an operation. Given a failure in these, flexibility is the key.

TOPIC: LACK OF SPILL MATERIALS

DISCUSSION: Units brought spill materials to the theater of operations, but only as an afterthought or in insufficient quantities to meet their requirements. Either this was not addressed in unit SOPs or units failed to follow the SOP regarding these items. Spill materials are usually the last items to be included in the load plan. On the surface, this is perhaps understandable. Ordinarily, spill materials are not the most important items to load when going to war (or to a contingency that has the potential of open conflict), but failure to include spill materials is unacceptable. Units eventually rushed to order the materials, only to find that delivery required weeks or sometimes months. The Base Camp Assessment Team (BCAT) team, an element of the Base Camp Coordinating Agency (BCCA) under the control of Task Force Eagle (TFE), ordered absorbent materials for the entire division since the logistical plan did not make provisions to provide them. To supplement the shortage, the Corps of Engineers used its Rapid Response Contract to purchase additional absorbent materials for more rapid distribution to the base camps. Some absorbent material supplies were also located that were administratively "lost" in various base camps or warehoused throughout the theater.

TECHNIQUES AND PROCEDURES: Units must transport a basic load of environmental clean-up and storage supplies during deployment. (This will be somewhat generic within a given theater and will need to be

adjusted based on the peculiarities of a given operation.) Without this basic load, units will be unable to meet primary responsibilities in the area of spills. Once deployed to a given site or base camp, units should immediately order and track replacement supplies. Ultimately, this was a logistical problem that occurred because of the failure of units to transport spill materials and logisticians did not plan for spill materials in support of the contingency operation. Units will never be able to carry enough spill materials on their vehicles due to the competition of other more critical supplies in the load plan. Logisticians must plan ahead for these requirements and develop a mind-set that makes spill materials a "push" rather than a "pull" item. Units should also have the Corps of Engineers coordinate pre-existing contractor support for contingency purposes.

OPERATIONAL

TOPIC: FIELD SANITATION

DISCUSSION: Field sanitation and preventive medicine in general are major components of *Military Environmental Protection*. Many units arriving in the AO during OJE were not prepared to handle field sanitation issues. Units did not have established and trained field sanitation teams and equipment on hand. This was compounded by the inability to instantaneously create base camps with more centralized facilities for the soldiers. Preventive medicine assets had little or no preventive medicine oversight of the initial operations by the LOGCAP contractor, Brown & Root Services Corporation (BRSC). The original LOGCAP contract written for OJE had no input from preventive medicine personnel located in Hungary or Bosnia. There was no stipulation that services provided in the areas of food, water, vector control, billeting, and sanitation specifications be based on military standards or requirements. Preventive medicine personnel were not provided the opportunity to assist in reviewing, updating, or regulating the initial LOGCAP contract with respect to these areas. Subsequent inclusion of preventive medicine issues alleviated misunderstanding of standards and expectations, providing the commander with a better field sanitation program. Units were generally not prepared to take care of themselves in a field environment.

TECHNIQUES AND PROCEDURES: Units were not prepared to handle field sanitation issues. There was the false expectation that base camps would already be established for them; therefore, many units did not bring tents or heaters. They may have had field sanitation kits, but most were reluctant to use them. (The importance of stocked, maintained, and readily available sanitation kits cannot be overstated. The presence of trained personnel to use the kits is also critical, or the kits remain in vehicles and are not used). To compensate for these shortfalls, preventive medicine detachments conducted field sanitation classes to raise the awareness and skill of soldiers on field sanitation. Classes were also taught to the soldiers of other nations since their field sanitation standards (or lack of standards in some cases) affected U.S. soldiers.

The need for a portable latrine that units can easily carry as part of their field sanitation kit was identified. This portable latrine should be small, easy to sanitize, made of durable material, and ideally able to function as a burnout latrine. A portable latrine of this type would aid in improving field sanitation at the small-unit level prior to establishment of more fixed facilities.

During the sustainment phase of the operation when base camps were established, the Base Camp Assessment Checklist used by the BCAT became a valuable tool for assisting commanders. From this checklist, commanders were able to determine the impact that environmental and sanitation issues would have on their mission accomplishment and on the general health of their troops. As a TTP success, preventive medicine personnel should be taught to apply the Base Camp Checklist. The list should be published in preventive medicine doctrinal documents and technical manuals as standard.

TOPIC: BASE CAMP COORDINATION AGENCY (BCCA), "TACTICAL" HYBRID OF DPW/USACE RESIDENT OFFICE

DISCUSSION: The BCCA was created as a separate staff element to provide technical engineering advice and support to the Assistant Division Commander-Support (ADC-S). The BCAA focuses support on construction (build-up), sustainment, and tear-down of base camps. It was a non-doctrinal staff organization that assumed or overlapped the responsibilities of other staff sections (division engineer, property book, safety, force protection, and others). The BCCA was the controlling agency for the initiation of new work by BRSC. Using the authority of the ADC-S, the BCCA provided letters of direction to BRSC. The BCCA was considered a primary G-staff office working directly for the TFE ADC-S. Most of these duties fall into the role of the traditional or doctrinal responsibilities of the DPW or the U.S. Army Corps of Engineers (USACE).

TECHNIQUES AND PROCEDURES: The BCCA staff functions grew as requirements evolved, and included an operations section, environmental section, planning section, real estate section, program management section, and the BCAT. Collectively the BCCA provided:

- Tracking for a broad range of information to include base camp building, sustainment, transition, and base camp closure.
- Preparation of daily reports to include battle update briefs, BCCA SITREPs, and input to the commander's nightly assessment report.
- Interface with the Defense Contracting Management Cell International (DCMCI) and BRSC LNOs, along with monitoring NATO-funded construction.
- A single POC for all TFE environmental matters.
- Coordination with TFE camp mayors and commanders, BRSC, and USAREUR (FWD) to ensure compliance with all applicable HW management, spill response, and preventive medicine standards and requirements.
- Coordination for base camp logistical requirements, working closely with the TFE PBO, G4, BRSC, and camp mayors. Provided a BCCA planning LNO at Eagle Main (Tuzla).
- Service as POC for all TFE real estate requirements.
- Service as the base camp customer representative to research and validate base camp work requests, developing COAs to resolve issues. Presented work orders and projects to the Joint Acquisition Review Board, coordinating with the work force and providing follow-up to ensure customer satisfaction.
- Installation level assessments and assistance in a variety of areas, to include a monthly assessment of each base camp that is provided to camp mayors, camp commanders, and the ADC-S. Assistance was also provided to base camps during both closure and transition activities.

All of this constitutes a major mission for an ad hoc organization whose members rotated at least every 179 days, if not sooner. The obvious question: Is there is an organization already in place designed to do this type of mission or perform the role with minor adjustments? The closest organizational structure with an ability to perform the roles and missions of the BCCA is the HQ, Engineer Group (Construction). With 82 personnel, this doctrinal organization is very robust with the capability to control Facilities Engineer (FE) teams (focused on environmental management services), utility teams, fire truck teams, CREST elements, and other elements that would meet the needs of the current BCCA. A second option would be to employ the Engineer Support Group, another organization that is currently found in ENCOMs. It consists of 18 personnel, and is also designed as a headquarters to control a series of subordinate teams, just like the HQ, Engineer Group (Construction). Its capabilities, as identified in **FM 5-116, *Engineer Operations: Echelons Above Corps***, follow:

- Manages engineer resources in support of facility and civil engineering; performs master planning and allocates resources, to include inspecting facilities; identifies, prioritizes, and conducts work, planning boards, and develops facility and civil-engineer projects.
- Manages real property, and can control real estate engineer teams and coordinate their activities.
- Manages housing and space use.
- Manages the theater environmental compliance and prevention programs, to include environmental compliance assessments, recommendations for corrective actions, and proper reporting.
- Performs limited design, to include preparing drawings, specifications, and cost estimates in support of facility and civil-engineer projects.
- Reviews the designs of contract architects and engineers to ensure they conform to the user's requirements, mission, and codes.
- Manages utilities services, maintenance, and repair efforts, and can control engineer utility teams and coordinate their activities.
- Inspects and ensures that the quality standards of construction projects by contract or troop labor are met.
- Manages base operations, to include sanitation and landfill operations, and can control fire-fighting and utility teams and coordinate their activities.
- Can perform limited supervision of troop labor and indigenous personnel.
- Manages facility engineering supplies through assigned units.

These capabilities and roles roughly parallel those performed by the BCCA. The question of whether or not we should build another unit in our TOE infrastructure or simply use the Engineer Group (Construction) or the Engineer Support Group as the control element to meet the requirements of the BCCA in contingency operations is a question worthy of discussion. While the BCCA is a Bosnia-specific solution, the need for an organization to perform these roles and functions is not a Bosnia-specific event. Similar requirements will be present in nearly every contingency mission, even if the duration of the operation is relatively short. There is a continuing requirement for a unit (or units) trained and identified to perform these roles and functions. Organizations should be identified and linked to the regions in which they will operate.

It is necessary to support the tactical commander in the same sense that we have installation staffs in CONUS and OCONUS today. In Europe we have institutionalized the Area Support Group/Base Support Battalion (ASG/BSB) structure to command and control these necessary functions. This is another potential candidate organizational structure to meet the roles and missions identified for the BCCA if we want to pursue a TDA solution. In any case, an organization must be available to support the tactical commander and provide a staff organization to handle the majority of the commander's non-tactical responsibilities. If the ASG/BSB organization is refocused to be deployable, it might also be a candidate to perform this mission. In any case, a dedicated solution needs to be institutionalized. An ad hoc organization is a sub-standard solution.

TOPIC: BASE CAMP ASSISTANCE/ASSESSMENT TEAM (BCAT)

DISCUSSION: The BCAT was developed as a component of the BCCA in support of TFE. This ad hoc organization became essential for the command to track the status of environmental programs and conditions at all base camps and sites. Besides a reporting function, the BCAT acts as an assistance team that works with the base camp mayor and his staff. It assures standardized application of directives on environmental conditions and helps the base camps meet those standards. Due to the constant changes in leadership at base camps and rotation of mayors and their staffs, the BCAT was critical in maintaining theater-wide standardization.

TECHNIQUES AND PROCEDURES: The BCAT assistance and sustainment assessment visits to base camps proved to be very beneficial. The predominant purpose of the team's assessment visits was to ensure that standards were being met in the areas of force protection, environment, safety, and health (preventive medicine), and in the overall quality of life for the soldier. While assessments were performed, the critical focus was on assistance to correct situations rather than just report conditions as they were. Standards were developed and approved by the ADC-S. The goal was to visit each base camp once in a four-week cycle. Personnel on the BCAT made assessments in their areas of expertise and provided ratings of red, amber, and green. The ratings were applied to the base camp sustainment slides shown each evening at the nightly divisional briefing.

TOPIC: HAZARDOUS WASTE (HW) REMOVAL

DISCUSSION: The logistician is tasked with the mission of coordinating the transportation, storage, handling, and disposal of HAZMAT or HW as articulated in FM 101-5. This role relates to the mission of coordinating unit spill prevention plans and field sanitation. The logistician relies on the expertise of the engineer for assistance in these environmentally related areas, just as he relies on the expertise of the surgeon when it comes to field sanitation.

TECHNIQUES AND PROCEDURES: When building a plan for HW, a good initial planning strategy for the logistician is to plan to back-haul an amount of HW equal to the amount of HW being taken into the AO. Assuming there is no other planning guidance, this should at least put the logistician "in the ballpark" for planning purposes. The question of how to remove or back-haul HW is more challenging. In the case of Bosnia, there were no facilities in the country infrastructure that were acceptable to receive HW, so units were required to haul the material out of the area. Waste had to cross international borders for disposal, and it had not been anticipated that these transboundary movements might be subject to the 1989 Basel Convention on the Control of Transboundary Movements of HW and Their Disposal.

The Basel Convention also provided that parties to the Convention might not allow the import of HW from non-Basel Convention parties unless there was a specific bilateral agreement which achieved environmentally sound management and disposal of such wastes. In this case, Bosnia-Herzegovina was not a party to the Basel Convention. Although the United States is a signatory to the Basel Convention, it does not have Congressional approval of that action. Regardless, the United States found itself bound by the restrictions of the agreement and soon had a significant amount of HW accumulated in temporary storage areas. (See Appendix C for a discussion of the OJE waste generation in 1996.)

TOPIC: SOLDIER SAFETY

DISCUSSION: Protection is the fourth element of combat power. Along with maneuver, firepower, and leadership, the effective application of protection enables a commander to apply the unit's full measure of combat capability. Safety is the third component of protection, and it overlaps many of the other elements. Safety protects us from ourselves as well as from external dangers. More American fighting men and women have been killed throughout our history by non-battle injuries and deaths than by enemy action. In contingency operations this is multiplied. Pollution prevention blends into the established safety considerations. Human waste, medical waste, and other hazardous material waste are similar issues that must be considered to provide protection for soldiers.

***"PROTECTION CONSERVES THE FIGHTING
POTENTIAL OF A FORCE SO COMMANDERS CAN
APPLY IT AT THE DECISIVE TIME AND PLACE."***

FM 100-5, Operations

TECHNIQUES AND PROCEDURES: *Military Environmental Protection* is a key element of safety. Its integration is essential for a variety of reasons, but none is more pressing than the health and welfare of soldiers. Human waste, medical waste, other hazardous wastes, other aspects of preventive medicine, and the soldier's overall environment are continuous safety considerations for units. They are present at all times and exist in all phases of an operation.

REDEPLOYMENT

TOPIC: BASE CAMP TRANSFER AND CLOSURE

DISCUSSION: At some point a base camp is either transferred to another unit as they assume responsibility for the site, or it is closed and turned over to the proper authorities.

TECHNIQUES AND PROCEDURES: The BCCA closure and transfer team was very successful and well received by TFE base camp personnel. The team consisted of an OIC from the BCCA and the BCAT, and representatives from the force protection, environmental, and real estate sections of the BCCA. Other team members came from the G4, the DRMO, the PBO, and JAG. For transfer visits, the main players are the OIC, the PBO, the environmental representative, and the real estate representative. The transfer visit is conducted after the new mayor arrives and conducts a 100-percent inventory with the outgoing mayor. Base camp transfer should generally be performed as a variant of a relief-in-place operation (FM 71-3, Chapter 6). Responsibility for the base camp should not be transferred until the majority of the troops on site belong to the new unit and the command structure is ready to take command. The official transfer occurs only after the Transfer Checklist is completed and signed by the ADC-S.

The transfer of a base camp is not purely an administrative action. There may be aspects of force protection and related tactical actions that must be performed as well. The philosophical baseline for this part of the equation can be best understood if you follow existing doctrinal guidelines for a relief-in-place. The responsibilities for both the incoming and outgoing unit are clearly articulated for this process and should be applied when transferring control of a base camp.

During base camp closures, the focus of the BCAA closure and transfer team is to assist the base camp mayor and the responsible unit in conducting an orderly close-out of the camp. (Those soldiers who participated in the drawdown of facilities in Europe or BRAC closings in the United States should already understand the fundamentals involved.) The first visit to a camp preparing for closure is scheduled six weeks out from the closure date. A follow-up visit is conducted three weeks out, and a final close-out visit is conducted on the closing day. On the final inspection, the team ensures that all personnel and equipment have departed, no force protection related materials remain, turnover of the property to its owner is completed, and any maneuver damage or environmentally related concerns have been remedied or addressed in some other fashion. A base camp is officially closed when a Close-Down Checklist is completed and signed by the ADC-S.

POST-DEPLOYMENT

TOPIC: CLOSURE ENVIRONMENTAL BASELINE SURVEY (EBS)

DISCUSSION: The closure EBS is directly linked to the initial EBS and any environmental compliance reports (ECR) that may have been performed on a site. It is a "snapshot in time" to document the endstate of the occupation. Although conducted as a part of redeployment, it is in the post-deployment phase where its importance will likely be greatest. In an historical document role it serves two primary functions. The first is to prevent improper claims from being brought against the United States. It is also a record of a site over time that can be reviewed if health problems occur among soldiers that were stationed at a site. This role proved important in the aftermath of Operations DESERT SHIELD/DESERT STORM when soldiers became ill with what is now known as the "Gulf War Syndrome."

TECHNIQUES AND PROCEDURES: Quality and detailed record keeping on the life of a base camp is valuable in helping medical personnel identify potential medical problems of the soldiers who served there. The EBS (both initial and closure) is an important document that needs to be used to protect the soldier from harm and the United States from potential financial liability.



SECTION IV: DTLOMS INTEGRATION

This section provides a general overview of TRADOC's efforts to integrate *Military Environmental Protection* across the Doctrine, Training, Leader Development, Organization, Materiel, and Soldier (DTLOMS) products. It will also tie together many of the techniques and procedures and focus on the issues of "training to standard" and the associated "train as you fight." This should help identify voids in the program that should be marked for future effort.

Environmental Integration Objective

Full integration will occur when everyone -- leaders, soldiers, and families -- automatically include environmental impact considerations in the planning and execution of activities. We have instilled the warfighting ethic throughout the force, and we are now instilling an environmental ethic as well. We must incorporate environmental considerations in our doctrine . . . in our decision-making process.

In 1992, the Chief of Staff of the Army, General Gordon Sullivan, stated the above environmental integration objective as part of the Army's Environmental Strategy. If TRADOC is successful in obtaining the objective, a soldier will respond to environmental issues as routine operations because it will be integrated into the way he thinks, the way he is trained, and the way he operates or fights.

The information provided here is designed to help you to see the "full court press" that is being made to integrate *Military Environmental Protection* across the Army. (For another look at this subject, see "Integration: The Key to Achieving the Army's Environmental Vision," in the Jul-Aug 98 issue of *News From the Front!* It is available at CALL's website as well. The article provides a look at how the USAES Environmental Division is accomplishing its mission of integrating environmental protection across the DTLOMS products in its role as the executive agent for Headquarters, TRADOC.)

DTLOMS Products/Goals

To achieve the environmental integration objective and incorporate the Army's environmental strategy, USAES decided the most variable framework to address the implications of environmental considerations was in terms of their impact on each of the DTLOMS products. USAES established DTLOMS domain goals as critical elements for achieving the environmental integration objective. USAES, working with the TRADOC Steering Committee and Working Group, translated these goals into specific projects and work priorities during annual In-Progress Reviews (IPRs). The DTLOMS products descriptions and goals are:

- **Doctrine.** Doctrine provides a holistic basis for the Army to incorporate new ideas, technologies, and organizational designs. It is the philosophical underpinning for all DTLOMS products. Doctrine serves as a catalyst for change, explaining that change in language soldiers and leaders can understand. The doctrine integration goal is to: Integrate environmental considerations into Army operational concepts.

- **Training.** Training molds the Army into a force that is capable of decisive victory. It ensures that soldiers are prepared to fight and win. The Army has one standard. That standard is tough, realistic, battle-focused training that prepares soldiers and units for a variety of missions. The training integration goal is to: Identify environmental training requirements by task, conditions, and standards, and integrate them into the Total Army Training System (TATS).

- **Leader Development.** Leader development is the process of developing or promoting the growth of confident, competent military leaders who understand and are able to exploit the full potential of present and future doctrine, organizations, technology, and equipment. Leadership is the product of the leader development process. Effective leadership transforms human potential into effective performance. The leader development integration goal is to: Identify leader environmental-related tasks, responsibilities and duties, and integrate environmental stewardship into unit operations.

- **Organizations.** Organizational design encompasses the allocation of personnel and equipment to units to perform specific types of missions. As the Army becomes smaller but is expected to accomplish a wider variety of complex missions, unit organizations and staffs will be tailored to the mission. These tailored organizations will face a variety of environmental challenges during all operations. The organizations integration goal is to: Identify staff organizations and procedures to integrate environmental considerations into the military decision-making process (MDMP).

- **Materiel.** Materiel requirements encompass the combat development function. TRADOC's combat development staffs represent the "users," i.e., the field Army, in providing a statement of need, or "requirement," to DA and DOD decision-makers and to materiel developers in the Army Materiel Command (AMC). The Operational Requirements Document (ORD) drives the development of the Army's new equipment. The materiel integration goal is to: Integrate environmental considerations into the acquisition process to achieve pollution prevention throughout the system's life.

- **Soldiers.** Quality soldiers, trained and led by competent and caring leaders, will remain the keys to success in Army operations. Soldiers of the 21st Century will face a variety of environmental challenges when preparing for and executing missions. The soldiers integration goal is to: Instill an environmental ethic into all soldiers to integrate environmental stewardship/pollution prevention concepts.

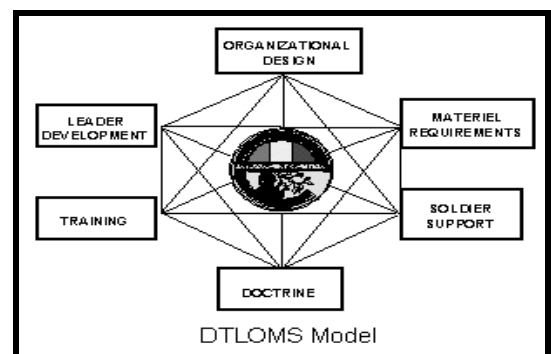
Horizontal and Vertical Integration

Horizontal integration is the application of the Army's environmental strategy, policies, and operating procedures across all DTLOMS products to achieve efficiencies and synergistic effectiveness. Vertical integration is the application of the DTLOMS products to all Army systems. The DTLOMS model illustrates this relationship. Environmental DTLOMS initiatives are described in the paragraphs below.

DOCTRINE

Doctrine Methodology

Doctrinal principles, tenets, and fundamentals guide the conduct of all Army operations. The Army's doctrine is based on fundamental, well-understood principles rooted in military experience. Army doctrine is also the authoritative basis for force design, materiel acquisition, professional education, and individual/unit training. Although the Army published an environmental strategy in 1992, commanders made no connection between environmental requirements in garrison and those in operational doctrine. Mapping the requirements of the Army's environmental strategy into operational doctrine entails a gradual process of introducing concepts and norms into keystone and capstone doctrine manuals simultaneously, while developing specific requirements in procedural publications.



TRADOC annually publishes the doctrinal integration priorities in the Environmental DTLOMS Integration Plan (EDIP). USAES, as TRADOC's executive agent, reviews all doctrinal manuals for environmental integration and forwards reviews to the manual proponent. The TRADOC Environmental Steering Committee member, representing the Combined Arms Center, reviews and coordinates the integration efforts for capstone and combined arms (corps/division level) manuals. TRADOC Service School Working Group members coordinate the branch-specific proponent manuals and soldier publications. USAES developed the DTLOMS Integration Environmental Tracking/Environmental Review (DIETER) database to track and standardize environmental integration into doctrinal manuals.

Doctrine Integration

In 1995, USAES published a series of white papers to gain acceptance of environmental concepts and their eventual inclusion into future revisions of the Army's keystone manual, **FM 100-5, Operations**. These papers examined why environmental protection considerations are relevant to Army operational doctrine. The intent of these white papers was to promote cognizance of the importance of environmental considerations in mission planning and to obtain general acceptance of this idea from military commanders. Based on positive field comments, the TRADOC Chief of Staff published environmental integration guidance for Army doctrine. It summarized the rationale for incorporating environmental protection into operational doctrine, provided a baseline of current requirements and developments, established guidelines for doctrine writers, and offered a methodology for rapid and flexible communication of environmental requirements to units.

Environmental-Specific Doctrine

TRADOC published the following environmental-specific doctrine:

- **Training Circular (TC) 5-400, Unit Leader's Handbook for Environmental Stewardship.** USAES published TC 5-400 in September 1994 as a primer on the environment. The manual identified leader actions that effectively integrate the Army's environmental program into unit training and operations. Over 100,000 copies were distributed to the field.
- **FM 20-400/MCRP 4-11B, Military Environmental Protection (Draft).** USAES, in concert with the U.S. Marine Corps (USMC), will publish this multi-service field manual. It will be the capstone environmental publication, providing a comprehensive understanding of how environmental considerations affect operational doctrine. The manual describes how a leader trains, deploys, fights, and re-deploys his unit while integrating environmental considerations. This manual is scheduled for publication in 3rd quarter FY 99. The latest version of the draft is available on the internet at <http://www.wood.army.mil/ENVIRON/en_hp.htm>.
- **TC 20-401, The Soldier and the Environment (Draft).** This TC will become a basic soldier publication outlining the soldier's environmental ethic, the Army's environmental strategy, and soldier responsibilities and duties. Initial entry soldiers and officer candidates will receive a copy of this manual during basic training and pre-commissioning courses. USAES will publish TC 20-401 in 3rd quarter FY 99.

TRAINING

Training Methodology

TRADOC uses the Systems Approach to Training (SAT) to focus its initial training development efforts. *SAT is a disciplined, logical approach to making collective, individual, and self-development training decisions for the*

total Army. It determines whether or not training is needed; what is trained; who is trained; how and where the training is presented; and the training support/resources required to produce, distribute, implement and evaluate those products. TRADOC reviewed environmental training needs and developed a plan to conduct environmental task analysis of common Military Occupational Speciality (MOS) and Officer Foundation Standards (OFS) tasks. TRADOC reviewed environmental training initiatives and validated requirements for additional training products. Rather than developing new stand-alone environmental courses, TRADOC integrated environmental considerations into the training development regulations/courses, TRADOC common core curriculum for professional development courses, and MOS training. TRADOC annually publishes training integration priorities. These priorities focus on influencing the training development process first and then on the development of resident, nonresident, and unit training products. Currently, TRADOC has completed, or has under development, 27 training products to include: 13 training support packages (TSPs), 6 television tapes (TVTs), 2 graphic training aides (GTAs), 2 computer-based instructions (CBIs), and 3 Army correspondence courses (ACCPs).

Initial Environmental Awareness Training

In 1993 TRADOC directed USAES to develop 13 separate Environmental Awareness TSPs for inclusion into professional development courses and initial entry training. The purpose of the TSPs was to provide initial environmental awareness training prior to the integration of specific environmental tasks into MOSs. Each TSP consisted of a two-hour lesson and the accompanying videotape, TVT 5-56, *The Soldier and the Environment*. The TSPs contain basic environmental awareness and knowledge necessary for a soldier of a particular rank to perform his job and minimize the impact to the environment. In January 1994, USAES forwarded these TSPs to all TRADOC service schools. TRADOC instructed the service schools to incorporate the new common core TSPs into their program of instruction (POI) prior to March of 1994.

Task Analysis and Integration into MOS Producing Courses

TRADOC is striving to integrate environmental considerations into all MOS training. Service schools have the task to ensure that environmental considerations are integrated into all MOS training. To meet this need, TRADOC directed the service schools to incorporate environmental considerations into branch-specific training products and doctrinal manuals. Integration is more urgent for some skills than others. For example, fuel handlers, heavy equipment operators, mechanics, and heavy weapons handlers require immediate attention due to their high environmental impact. In conjunction with the working group, USAES is conducting task analysis of 70 high-profile MOSs to identify tasks, conditions, or standards requiring environmental integration. This analysis includes the development of a list of common environmental skills and knowledge. This list is compared against current inventories of the targeted MOSs.

USAES works with service school subject matter experts to determine the environmental implication of MOS-specific tasks. They analyze the data and recommend, as appropriate, environmental steps and measures for inclusion into the existing inventories. USAES is scheduled to complete the analysis by October 1998. At the conclusion of each specific task analysis, USAES prepares and forwards the final MOS report for service schools to use when they change MOS critical task lists or revise Soldier Training Publications (STPs).

Environmental integration into the training domain will require a dedicated effort from the service schools, the TRADOC proponent (DCSBOS), and the executive agent (USAES) over the next three years to ensure that all training products are completed and fully integrated into service school POIs and unit training. USAES will complete all current projects by 4th Quarter 99.

LEADER DEVELOPMENT

Leader Development Methodology

Leader development is a continuous and cumulative process of education and training, experience, assessment, reinforcement, and feedback. It involves evaluating and selecting individuals for promotion, positions of greater responsibility, and additional duties. It is an integrated, progressive, and sequential process that involves institutional training and education, operational assignments, and self-development. USAES has developed a series of initiatives to affect the institutional leader training and education regulation and leader common-core tasks.

Leader Common-Core Tasks

Common-core task lists contain the approved training required of, and common to, all leaders regardless of branch or career management field. Common-core task lists consolidate all approved common military, common leader, and directed training into a single task list for officer (to include pre-commission), warrant officer (to include pre-appointment), and noncommissioned officer leader education and training courses.

TRADOC is currently reviewing and aligning tasks that are common to the officer, warrant officer, and NCO education systems. As part of that effort, USAES is integrating environmental tasks into the common-core curriculum of all leader development courses. USAES is developing environmental tasks and TSPs that will become the basis of the leader environmental training program to replace the original environmental awareness training. Service schools will implement these TSPs and integrate environmental concerns throughout course POIs.

ORGANIZATION

Organization Methodology

USAES's original concept for affecting the organizational design centered on establishing an environmental officer Additional Skill Identifier (ASI). The ASI would identify positions that require special qualifications in managing the Army Environmental Program and in providing environmental planning services to the commander. The ASI would be added to existing Table of Equipment (TOE) positions. This idea was eventually dropped due to manpower shortages and difficulties in managing low-density ASIs.

In an attempt to provide environmental expertise and coordination at the unit level, USAES proposed that unit commanders appoint and train Unit Environmental Compliance Officers (UECOs) as an additional duty appointment. The Army approved this concept. TRADOC directed USAES to develop the UECO training program. Additionally, USAES reviewed and integrated the UECO concept in the Army's primary environmental regulation, **AR 200-1, *Environmental Protection and Enhancement***, February 1997.

Based on some of the emerging techniques and procedures from operational environments like Bosnia, there may be new considerations for the redesign of some organizations, or even the creation of new units, that support the commander in accomplishing his *Military Environmental Protection* roles. Although currently formed in an ad hoc fashion, organizations such as the BCCA and the subordinate BCAT are not "flash in the pan" requirements, but fill roles and functions that will be required for any contingency in which we operate. The discussion of these requirements, and how to best organize to accomplish them, will be a future agenda item.

MATERIEL

Materiel Requirement/Methodology

The materiel products encompass the combat development function. TRADOC's combat development staffs represent the "users," i.e., the field Army, in providing a statement of need, or "requirement," to DA and DoD decision-makers and to materiel developers in the Army Materiel Command (AMC). The requirement development and determination processes are complex because there are so many potential solutions to a problem and there is a vast amount of new technology constantly being introduced. Because of the expense and significance of each decision, the process is lengthy, highly proceduralized, and subject to multiple decision steps by senior leadership. The result, however, provides a requirement determination that drives the development of the Army's new equipment.

TRADOC, as the Army's combat developer and materiel "gate keeper," determines and approves all materiel requirements and can significantly influence the acquisition process. By successfully integrating pollution-prevention (P2) requirements in the process, it can effectively mitigate future environmental costs and increase readiness. USAES has concentrated on integrating pollution prevention concepts into the acquisition and logistics regulations/policies and the requirements determination process. This process uses operational requirements documents (ORDs) to link the user and the materiel developer.

Examples of environmentally related materiel that either needs to be developed or purchased to support the force in accomplishing aspects of *Military Environmental Protection* may include:

- New sampling equipment for preventive medicine personnel.
- Additional purchases of the recent "environmental" chip for the mobile mass spectrometer on the M93 Nuclear, Biological, and Chemical Reconnaissance System (NBCRS).
- Lightweight portable toilet for unit field sanitation kits.

SOLDIER

Soldier Methodology

USAES environmental integration efforts into soldier support concentrate on establishing and inculcating a soldier environmental ethic and linking it to the ethical decision-making process. The premise is that soldiers have an inherent professional and personal responsibility to understand and support the Army's environmental program.

Establish a Soldier Environmental Ethic

Stewardship is a key element of the Army's environmental ethic. The Army is charged with protecting and defending the nation, to include safeguarding the environment. In addition, the Army has been entrusted with large land areas and many other resources. The American people expect the Army to exercise good judgment in the use and management of those resources. The soldier's quality of life, as affected by his immediate environment, and his pride in the professional standards of the Army are related to the institutional environmental ethic established in the other domains. Environmental protection practices in the Army will directly affect the pride, morale, recruitment, and retention of soldiers and their families. Environmental stewardship can be achieved only if natural and cultural resource concerns are integrated into the Army decision-making process. Army operations and strategies must include these concerns from the outset so that environmental issues are identified and resolved quickly. USAES has made a concerted effort to revise current military leadership concepts to include the Army

Environmental Strategy Goal -- *Spread the Environmental Ethic*. USAES has worked with leadership doctrine writers to integrate the environmental ethic as part of ethical decision-making. **FM 22-100, *Military Leadership***, currently defines ethics as "principles or standards that guide professionals to do the moral or right thing which should be done." To achieve this goal, USAES has made this task an objective for all DTLOMS initiatives.

KEYS TO SUCCESSFUL INTEGRATION

TRADOC has made significant strides toward the environmental DTLOMS integration objective and in accomplishing the individual DTLOMS products' goals. By the year 2000, all of the currently identified DTLOMS initiatives will be complete, and the essence of the environmental ethos will be well entrenched into the Army way of doing business. At that point the program will enter its sustainment phase. USAES will continue to function as the tasks/course proponent for 36 environmental DTLOMS products, responsible for their maintenance and revision. Additionally, USAES, as the executive agent, will continue to analyze environmental DTLOMS requirements, conduct analysis of the program's effectiveness, coordinate integration among the schools, and assist TRADOC in developing future products. The **keys** to achieving the integration objective are:

- Sustained funding of the program.
- Continued USAES involvement as the executive agent.
- Proactive doctrine and POI integration by service schools and proponents.
- Acceptance and use of doctrine and unit training products by the field.
- Periodic evaluations of the integration, usage, and effectiveness of DTLOMS products.
- Sustained maintenance of DTLOMS products to ensure they are current and relevant.
- Committed Army and TRADOC leadership.

SECTION V: SUMMARY

"No commander has finished when he has taken his decision and embodied it in an order. He remains to the last responsible for its execution in the way he intended and for the manifestation of his will in every stage of its accomplishment."

Hans von Seeckt
Thoughts of a Soldier

The techniques and procedures identified or referred to in this newsletter are only a selection of what has been experienced or learned through operations and training. Appendix F provides other resources for finding techniques and procedures. The general techniques and procedures will be true wherever you are stationed or deployed, but the specifics will vary.

While you do not forget what you have learned in CONUS, you must view OCONUS in a different way when you implement the specifics of *Military Environmental Protection*. You must become familiar with terms such as host nation (HN) and documents such as the Overseas Environmental Baseline Guidance (OEBGD) and the Status of Forces Agreement (SOFA). If you are deployed to a contingency where these documents are not used, the challenge multiplies. It is critical that standards are quickly established in a contingency operation. If they are absent, you must apply common sense and use your SOP as a guide until specific rules are established. Remember the environmental ethic that the leadership has clearly articulated, and you will be on your way to establishing a local program that will serve the safety and welfare of your soldiers as well as the environment.

Remember and apply the principles of *Military Environmental Protection*.

- Avoid unnecessary damage and limit collateral damage.
- Analyze environmental considerations/impacts in concert with mission requirements and force protection.
- Incorporate environmental protection considerations into planning procedures.

These principles will **always** apply. The specifics that go with these principles will vary with the mission, the phase of an operation, and the location during an operation. The risk assessment you perform, in conjunction with the directions you receive from higher headquarters, will then be applied in the same fashion as rules of engagement in the application of combat power.

APPENDIX A

OJE HAZARDOUS WASTE GENERATION

Hazardous waste can become a significant problem. Failure to have policies and procedures in place to deal with the hazardous waste you create is foolish and a recipe for failure. This appendix provides an example of the types and volumes of hazardous waste that can be generated. The wastes identified in the chart provide a one-year snapshot (1996) of the hazardous waste generated by U.S. forces in support of Operation JOINT ENDEAVOR. About 38 percent of the waste was generated in Hungary, and about 62 percent was generated in Bosnia-Herzegovina/Croatia.

ITEM	TOTAL (kg)
Aerosol cans	2,690
Antifreeze	147,611
Asbestos	2,299
Battery acid	9,639
Battery, dry cell	50
Battery, lead acid	457,262
Battery, lead acid, undrained	10,000
Battery, lithium	11,710
Battery, magnesium	532
Battery, mercury	150
Battery, nicad	1,362
Cartridge, ink	100
Filters, POL contaminated	13,541
Grease, automotive	95,932
Metal containers	321,637
Mixed POL	2,600
Paint	2,586
Paint, solid	5,100
Photographic waste	36,448
Plastic containers	342,862
Soil, POL contaminated	145,548
Solids, POL contaminated	171,141
Solvent, Nonhalogenated	500
Spill residue, solid	35,500
Spilled POL liquids	200
TOTAL	1,817,000

Fuel for recycling (in Hungary only) 139,896

Oil for recycling (in Hungary only) 109,383

APPENDIX B

THE LIFE OF A BASE CAMP

The life of a base camp provides a good framework for the discussion of the many aspects of *Military Environmental Protection* that will be faced during a contingency operation. Many of these aspects are merely minor adaptations to the military decision-making process (MDMP) defined in FM 101-5 and the result of good battle-focused training as explained in FM 25-101. If these processes are performed incorrectly, your chances of success in *Military Environmental Protection*, or in any other area for that matter, are likely to be poor. In this discussion we will look at an example that highlights the application of *Military Environmental Protection* throughout the phases of an operation.

PLANNING

The life of a base camp begins with the formulation of an OPLAN. This is the conceptual stage. The birth of a base camp should originate with a series of potential packages with varied standards that are applicable to any given contingency or other type of operation. We have already identified some of these potential packages (i.e., force provider), and depending on the standards of construction, one or more of them may apply to the mission that an OPLAN is designed to support. Intelligence about the OPLAN's projected AO and the subsequent assumptions of the OPLAN set the stage. The continuing efforts to focus IPB on the AO should include efforts by the surgeon to obtain the most current preventive medicine information. The projected standards of construction, based on the assumptions about the expected length of stay of forces, provide a key element of the initial guidance to force planners. Planning decisions about the considerations of *Military Environmental Protection* are directly linked to these assumptions.

Base camps are really small towns and require all of the considerations that would be applied to them. The "city planner" or master plan functions must be included in the planning phase of the operation. Ideally, the staff will be able to bring in the expertise of the projected element that will function as the Base Camp Coordination Agency (BCCA) to assist with this planning phase. High standards of construction and a decision to develop a robust base camp and infrastructure dictate high standards of *Military Environmental Protection*. The designated environmental executive agent (EEA) must provide environmental guidance and standards for the operation. This guidance will be based on the EEA's overall risk analysis (FM 100-14). (Considerations for the integration of other service engineer assets and civilian contracting will ideally be included to optimize each of the focused skills and capabilities that are available.)

"Lucy," the base camp in our example, was conceived nearly three months before deployment into the country of Krasnovia. The chief of staff ensured that the planning parameters for the OPLAN were well understood and that this plan had environmental guidance and assumptions. Annex L of the OPLAN (Environmental Considerations) was prepared and environmental considerations were applied as appropriate. Fortunately, the IPB included initial evaluations of potential base camps and other sites (to include environmental considerations) from staff analysis performed by each section of the staff. One of the key elements of information, obtained as a result of the surgeon's analysis, was an updated package of information provided by the DIA on preventive medicine considerations for all potential sites in the AO. The likelihood of success was high as reconnaissance teams were deployed to begin physical reconnaissance of sites, to include the location that would soon be known as Lucy.

The JAG is a critical player in the planning process. He needs to be fully aware of laws and regulations

surrounding the environment. Besides knowing internal guidelines and regulations, the JAG must understand the international laws and agreements that impact operations. The effect of the Basel Convention on the transit of HW for operations in Bosnia-Herzegovina is a classic example of this. Host nation laws, regulations, and national sensitivities are also critical for the JAG to understand and incorporate their ramifications into the planning process.

MOBILIZATION

The team performing the reconnaissance of the future base camp was comprised primarily of military personnel. Since it was anticipated that the site would be a maneuver brigade headquarters, the leader of the reconnaissance team was LTC Jones, the brigade XO. He brought along the HHC company commander to ensure the commander knew his role as mayor of Base Camp Lucy. A representative from the brigade S4 was on hand to collaborate with the HHC commander and ensure that the camp and its facilities would be up quickly and running efficiently, taking into account the appropriate *Military Environmental Protection* considerations. Since the team risked hostility from the local population (fairly low risk, but present nonetheless), the security element for the team was provided by the brigade scout platoon. The element also contained a chemical reconnaissance section equipped with the M93 NBCRS (whose mobile mass spectrometer had the "industrial/environmental" chip). This capability, linked with the preventive medicine expertise in the security element, ensured that the brigade was not selecting a site that looked good on paper, but would be a health hazard to the troops occupying it. Casualties from health and environmental considerations (to include safety lapses) can be the greatest threat to soldiers. Historically, disease has killed or incapacitated a greater number of soldiers than any other factor.

For engineer expertise, the element included MAJ Smith. She provided the staff integration for *Military Environmental Protection* considerations, and used her engineering expertise (construction/general engineering/tactical engineering) to ensure that the site would accommodate the units and all facilities. (The decision about how to site a base camp should be based on a variety of considerations. The issue of positioning to perform the mission and the inherent force protection issues associated with this should be the first consideration. There may be political considerations attached to the decision or contracting challenges that will limit where a site may be located, but a site should always be sound from a tactical point of view and force protection in general.) Fortunately, MAJ Smith had several camp templates that had been chosen as potential sites from a map analysis and from information available in the OPLAN. She was prepared to provide a recommended solution for layout of the base camp at the completion of the reconnaissance. Her expertise was absolutely vital to the team.

A real estate expert (from a corps real estate support team [CREST]) was also with the security element to ensure that the lease written on the site accounted for existing conditions as documented by results of the initial EBS (see Appendix B of FM 20-400/MCRP 4-11B).

The primary purpose of the initial EBS at this point was to ensure the site would be a healthy one for troops. A copy of the initial EBS was included in the contract packet for the site. In this secondary role, the initial EBS served to protect the U.S. from claims and liability for the site. This packet grew over time as any environmental compliance reports were added. Ultimately, it contained the closure EBS that established the environmental life of the base camp while under U.S. control.

Assisting the real estate agent and the element leader was CPT Law, who was an expert in international law. Before deployment he brushed up on his knowledge on the specific environmental laws of Krasnovia and the conventions to which the Krasnovians were signatories. The reconnaissance team was well served by CPT Law's expertise and was able to avoid any mistakes in this area.

The team was also able to meet all the demands of the site reconnaissance and perform reconnaissance of the routes leading to it. Before the team departed, it met the initial quartering party requirements for the brigade and provided important information to the element that would function as the brigade's advance party.

DEPLOYMENT

The brigade commander was pleased with the report from the reconnaissance element and the brigade XO. There were minor considerations, but overall the site was a good location for a base camp and headquarters for the brigade. Based on the reconnaissance, the brigade was able to adjust their OPORD to reflect information about the site that would be their home for the next six months. It was not clear at this point how much longer the operation would continue beyond six months; however, the decision was made to apply a temporary standard to site construction (with up to 24 months expected use). Some thought was also given to extended occupation and to what standards would be changed if a decision was made to stay longer. These decisions would affect the level of environmental considerations for the site such as whether or not a sewage system, linked to a separation plant, would be developed.

The advance party had a clear idea on what the base camp layout would be and the conditions of the routes leading to it. Using information gained from the reconnaissance, the brigade deployed its quartering parties to the site as construction of the base camp began. The engineer unit responsible for the construction of Base Camp Lucy was a Naval Mobile Construction Battalion (NMCB). The camp could have been constructed by any joint service engineer organization or even a civilian contractor, so having common information for standards and design of a given site are critical to ensuring standards are understood and expectations are met.

Fortunately, the theater commander and his staff had identified the requirement for an organization to function as the BCCA when the OPLAN had been written, and an appropriate unit had been on the TPFDL and trained to perform in this role. It contained an element organized, manned with the proper expertise, and trained to perform in the role of the Base Camp Assistance/Assessment Team (BCAT). This organization was especially important for assisting commanders with the integration of *Military Environmental Protection* throughout the AO. When deployment occurred, this unit was one of the first units to deploy since it had critical responsibility for establishing the base camps and other sites within the AO in support of the contingency. The subordinate BCAT organization provided expertise that was well received at Base Camp Lucy and all of the other sites in the AO. With this sort of preventive assistance, quality of life and the overall health of the soldiers within the AO was improved as sites were set up to deal with environmental (and the imbedded preventive medicine) issues.

As subordinate units of the brigade deployed and moved into their respective areas of Base Camp Lucy, they received guidance on a variety of SOP items, including those peculiar to life at Lucy. As part of this guidance, units also received a series of environmental guideline standards that would make their quality of life better. These standards and procedures were based on the theater-wide guidance provided in the OPORD by the theater commander and his staff.

OPERATIONS

Sustainment of Base Camp Lucy is the story of a small town. The mayor, in this case the brigade HHC commander, has a key role in minimizing the time the brigade commander needs to focus on base operations and in providing him with recommendations on decisions that need to be made. The mayor's staff will be small, but he will need the staff to do his job correctly. Several key and dedicated NCOs make a big difference in helping the commander in his role of mayor and managing the environmental program for the camp. The mayor needs to make use of the BCAT. While this team serves the higher commander as a reporting agency (base camp status may be on

the higher commander's CCIR list), it also has an equally important role in providing assistance to the mayor of the base camp. The mayor and his staff ensure the environmental sustainment or improvement of the site. They make use of periodic environmental conditions reports that they perform and BCAT assistance inspections (using standardized checklists). The BCAT visits will help to define site conditions, document site status, and assist the site leadership.

A key player for the brigade commander and the mayor in sustaining the site is the logistician (brigade S4). The logistician has the staff responsibility for coordinating the construction of facilities and installations, field sanitation, food preparation, water purification, unit spill prevention plans, and the storage, handling, and disposal of hazardous materials and hazardous wastes. These considerations must include the issues of preventive medicine (to include field sanitation and mess and the basic healthiness of a site), pollution prevention, and the related questions of environmental management. Although not specifically mentioned in FM 101-5, the logistician also has responsibility for coordinating with the surgeon on all matters related to medical waste. The G4 will spend considerable time coordinating with the BCCA and other agencies to ensure that the base camp has what it needs to do the job. Hopefully, issues such as hazardous waste removal will be accomplished through DLA/DRMO agencies or contracts that have been put in place to meet those requirements, or the brigade G4 and his fellow military logisticians will find it necessary to find a solution using military assets. This will create a less than desirable situation that expends military assets better used for other missions.

Infrastructure upgrades are a collective responsibility based on the needs of the site and guidance from higher headquarters. Commanders responsible for base camps and other sites forward their requests to the BCCA. The BCCA is responsible for developing and maintaining a list of construction projects for the AO. This list is approved by the appropriate theater organization (USACE).



REDEPLOYMENT

At some point the base camp is turned over to another unit or prepared for closure. If the base camp is turned over to another unit, it becomes a property book issue along with normal procedures for a relief-in-place as related in tactical doctrine. The basic concepts for a relief-in-place (not under pressure) apply, and both the S3 and the S4 are key players. In this case, a closure EBS is not performed, but there will be guidance that directs an interim report within a certain number of days from the base turnover date. The BCAT should assist with this and act as a third party expert for both the incoming and outgoing units.

If the base camp is closed, the focus is different. A closure EBS is now essential and the personnel involved in the process should be included in the BCAT. The closure EBS verifies site conditions and provides the "final snapshot" included in the folder for the base camp. If there are any environmental surprises at this point, the base camp leaders were likely poor performers during the operations phase of the operation. Higher headquarters will have made closure standards clear to the site commander and his mayor, providing guidelines for the salvage or disposition of materials that went into development of the base camp. Guidelines will also be provided as a part of defining standards for base camp decommissioning or closure. The closure EBS is more focused on potential liability for the United States than on health conditions for the soldier, but may later be used to provide data to medical investigators when situations like the Gulf War Syndrome occur. When the closure EBS is compared with the initial EBS and any ECRs or other available information is incorporated, a series of snapshots provide the facts necessary to define the life of a specific base camp.

The base camp should be a fond memory that is put to rest in a proper fashion, not a sad story that resurrects itself in a series of claims against the United States.

APPENDIX C

NTC SPILL RESIDUE COSTS

Mechanized warfare, and the training we do to fight and win, includes the creation of hazardous wastes and a high likelihood for spills. Clearly we need to be trained to not only deal with these events, but to deal with them in a cost-effective manner. The first piece is linking this to what leaders must do and demand even in the midst of a combat operation. The second piece is the one this appendix focuses on: being physically smart about how to deal with spills and the collection of hazardous waste.

Cleanup of POL spills can be expensive, but it does not have to be. With proper training, soldiers can make it less expensive by improving their techniques. The failure to do so means throwing away dollars that could be better used for other costs associated with training. We simply do not need to do things that cost us the ability to train effectively.

Soldiers need to know how to clean up a spill in a way that corrects the effects of the spill, and does so by gathering a minimum of dirt and other materials. (Note the weight associated with the contaminated soil listed on the rotational spill information included with this appendix.) Additionally, there is a discipline involved in keeping this material from contaminating other materials. The reason for this is fairly simple. First, the cost of POL-soaked soils can be lowered if the spill is contained quickly and the overall amount of soil that must be removed is reduced. Second, when POL-soaked soils are mixed with other soil or materials, the quantity of total material to be dealt with is increased. (Some states consider POL-soaked soils as hazardous waste.) It costs approximately \$8 per pound to remove POL-soaked soils, so the soil must be removed properly. Do not pick up contaminated soil with a bucket-loader when it should be picked up with shovels. Over 990,000 pounds of contaminated soil were turned in during a specific rotation (98-05) at NTC. Think of the training money that would have been saved if proper procedures had reduced that amount by 50 percent.

Spill prevention (good unit practices, SOPs, training, and discipline) is the key to reducing cost and liabilities. (Appendix E addresses spill response.) However, the reality is that spills can never be eliminated, although they can be dramatically reduced. Soldiers need to be smart about how to handle spills and the manner used to perform spill cleanup. There are better uses for training monies than to spend more on spills or spill cleanup than is necessary. Be proactive, be responsive, and be smart about how you handle spills!

ROTATION 98-05

NTC REPORTED SPILLS

<u>DATE</u>	<u>TIME</u>	<u>GALLONS</u>	<u>MAT</u>	<u>GRID/AREA</u>
02/10/98	1200	20	HYDFLUID	BIKE LAKE
02/10/98	1620	15	JP-8	02032902
02/11/98	1500	30	JP-8	02032902
02/11/98	1530	1.5	OIL	024298
02/12/98	1600	25	JP-8	293027
02/13/98	UNK	20	ANTFREEZE	DRAW YARD
02/13/98	UNK	4	JP-8	DUST BOWL
02/13/98	1000	3	JP-8	DUST BOWL
02/13/98	1130	5	JP-8	RUBA
02/14/98	0800	0.5	SOLVENT	DUST BOWL
02/14/98	1400	15	JP-8	DUST BOWL
02/16/98	1400	15	JP-8	261987
02/17/98	1430	30	JP-8	544010
02/18/98	2000	15	JP-8	43961533
02/18/98	UNK	5	OIL	596092
02/20/98	1400	22	KEROSENE	DUST BOWL
02/21/98	0430	3	OIL	52522583
02/21/98	0430	1 PINT	JP-8	52522583
02/23/98	1100	30	JP-8	2698
02/24/98	1300	15	JP-8	5101
02/26/98	1300	25	OIL	48580453
02/27/98	1400	10	JP-8	485045
02/27/98	1400	4	OIL	37349421
02/28/98	1230	5	ANTFREEZE	44111309
03/01/98	1000	7	JP-8	RUFMA
03/01/98	2100	20	JP-8	RUFMA
03/01/98	2200	20	JP-8	RUFMA
03/01/98	2300	15	HYDFLUID	DUST BOWL
03/02/98	2130	1	ANTFREEZE	RUFMA
03/03/98	0645	15	HYDFLUID	RUFMA
03/03/98	1930	10	JP-8	RUFMA
03/04/98	1200	5	ANTFREEZE	RUFMA
03/05/98	1700	1	FRH	RUFMA
03/05/98	1945	5	JP-8	RUFMA
03/05/98	1945	8	HYDFLUID	RUFMA
03/10/98	0920	15	JP-8	RUFMA

BREAKDOWN**JP-8:** 289 gallons and 1 pint spilled and reported.**OIL:** 38.5 gallons spilled and reported.**ANTIFREEZE:** 31 gallons spilled and reported**HYDRAULIC FLUID:** 58 gallons spilled and reported.**SOLVENT:** 1/2 gallon spilled and reported.**KEROSENE:** 22 gallons spilled and reported.**FRH:** 1 gallon spilled and reported.**NOTE: A TOTAL OF 990,120 POUNDS OF SOIL WERE TURNED IN.**

APPENDIX D

ALASKA – STORY OF A SPILL

EXECUTIVE SUMMARY (EXSUM)

The XX Battalion (); XX Army unit, Fort XXXX, conducted training exercises from 3 Feb 96 to 23 Feb 96 on State of Alaska land at the Hatcher Pass Recreation Area. In Apr 96, two training sites where diesel had been spilled and debris scattered were reported to the state. USARAK conducted cleanup and a 15-6 investigation was instituted in Jun 96 by the Army unit's command, Fort XXXX. The 15-6 investigation officer ultimately determined that only approximately 70 gallons of diesel had spilled, principally during tent stove refueling. The overall poor condition of the sites was largely attributed to snow cover and weather conditions. The state and the USACEDC Alaska Field Office conducted a joint criminal investigation into possible violations of federal or state environmental laws. The state decided to prosecute OICs MAJ XXXXX and MAJ XXXXX. USACID's Special Agent XXXXX recently indicated that the state intends to charge the OICs with a misdemeanor offense, presumably criminally negligent discharge of oil. Criminally negligent discharge of oil is a Class A misdemeanor, punishable by up to one year of imprisonment and a \$50,000 fine.*

* Names and unit specifics have been removed.

The spill of POL products or hazardous materials may well be the most recurring environmentally related problem commanders will have to face. A unit must have an SOP that defines how to prevent a spill or how to deal with a spill should it occur. In the case of the unit in this story, they either had no such SOP or failed to follow it. When training is being conducted in an off-site area (and in an extreme climate area), units should automatically review their SOP and check it against local requirements to ensure their standards and procedures are appropriate.

If the unit in the above example had done these things, the incident may not have occurred, preventing prosecution of the unit's OICs by the Attorney General of Alaska. The prosecution based their case on **failure to report** the spill, not on the fact that the unit had a spill and polluted the area with other materials. Spills, like accidents, will happen in spite of the most rigorous efforts of leaders and soldiers to prevent them. When they do happen, they are not something to "sweep under the carpet." This philosophy is ethically and officially out of line with the environmental stewardship policies of the Army and the Department of Defense, and will result in punishment. Spills **must** be reported and in a timely manner!

Penalties for violations of federal laws include enforcement actions; administrative intervention from the Environmental Protection Agency (EPA) and other federal, state, and regional agencies; assessments; or cease and desist orders. Often the fines and penalties are paid from funds designated for base operations or training. The same considerations are true for state or local laws and ordinances as well. Know the laws and ordinances. Do not assume they do not apply to you.

Violators can be held personally liable for cleanup costs and may face civil or criminal penalties. A violator is the actual person who caused the contamination, but may include the commander, supervisor, or leader who allowed the contamination to occur and did not take immediate action to prevent or correct it. The penalty can be up to \$50,000 for each day of violation and up to two years in jail. If that is not enough, UCMJ charges may also be brought against the offender.

The example above is a sad story, but it is also a success story. As you review the news releases and articles which follow, note the repeated references to the environmental concern that local Alaskan-based units demonstrated. The leadership has done a good job of helping soldiers and other service members of the region be environmentally aware and responsible. This needs to be the hallmark of the Army in this area, and clearly follows not only the intent but also specific guidance of the leadership of the Army and the Department of Defense.

DEC NEWS RELEASE

*Alaska Department of Environmental Conservation
410 Willoughby Ave, Juneau, Alaska 99801-1795
Phone: (907) 465-5060 Fax: 465-5097
<http://www.state.ak.us/dec/home.htm>*

July 15, 1997

ARMY OFFICERS CHARGED WITH POLLUTION OFFENSES

The State has charged two U.S. Army majors with misdemeanors for polluting water or land during Army unit exercises conducted on state land near Hatcher Pass in February 1996. The charges follow a lengthy investigation by the Army and ensuing discussions by the Alaska Department of Law Environmental Crimes Unit with the U.S. Department of Justice and the U.S. Environmental Protection Agency.

After a report by a civilian, the Department of Environmental Conservation (DEC) investigated and found spilled fuel at sites on the land the units had used. The Army then investigated at two sites where the "Army unit" had improperly filled heaters they were using during exercises. Spills at both sites were not reported by the military units as required by law, and the spills had not been cleaned up at the time of the investigation. Investigators also discovered improperly disposed sewage and solid waste including paper, scrap lumber, cardboard, cement blocks, syringes, and other waste.

The Alaska Attorney General's Office filed charges on behalf of DEC against XXXXXXXXXX and XXXXXXXXXX, officers in charge of the sites at the time of the exercises.

Marianne See, DEC Director of Statewide Public Service, said, "Land and water resources must be kept clean not only by private citizens who use them, but especially by government agencies - including the military. Local residents in this case voiced strong concerns about the mess left behind." See said that the Army did follow up with a good investigation and cleanup.

The training Army units responsible for the pollution came from out-of-state for the purpose of the exercises. "Our military forces based within Alaska have developed a greater understanding and concern for complying with environmental and public health rules, and we would not expect to have these kinds of violations arise from in-state Army units," See said.

For further information, contact Marianne See, DEC Anchorage, 907-269-7634.

WEDNESDAY, July 16, 1997

METRO

ANCHORAGE DAILY NEWS

Troops' Waste Cited

By Estheft Pan
Daily News reporter

The U.S. Army officers responsible for XXXXXXXX exercises that left diesel fuel and other waste near Hatcher Pass last February were charged with misdemeanors Tuesday by state authorities.

Maj. XXXXXXXX and Maj. XXXXXXXX were leaders of the Fort XXXX, X.X.-based element of an Army unit that trained for three weeks on the Willow side of Hatcher Pass.

Each faces three misdemeanor charges of pollution, oil pollution, and failure to report an oil spill. The Class A misdemeanors are punishable by up to one year in jail or a \$50,000 fine, said Ron Sutcliffe, an assistant state attorney general and head of the Department of Law's Environmental Crimes unit.

The charges follow an extensive investigation of the incident by the Army and discussions with the U.S. Department of Justice and the federal Environmental Protection Agency, Sutcliffe said. They were filed on behalf of the state Department of Environmental Conservation.

The pollution left by the training Army unit included almost 100 gallons of spilled diesel fuel, as well as litter and human waste, state authorities said. The spilled fuel was not reported or cleaned up by the unit, as required by law. The Army inspection also found improperly filled heaters, paper, scrap lumber, cardboard, cement blocks and syringes at the site.

The Army spent more than \$20,000 and four months cleaning up the mess, said Sutcliffe and Chuck Canterbury, a spokesman for the Army at Fort Richardson.

Such blatant environmental damage by a military unit is quite unusual nowadays, said Canterbury. "We've have gotten really environmentally conscious around here," he said. Alaska bases are some of the country's cleanest and most environmentally friendly.

"We've been working like beavers to make sure we meet the EPA standards," said Canterbury.

The fact that the division was from the Lower 48 might help explain the uncharacteristic mess, but doesn't excuse it, said Canterbury.

"Environmental infractions are not treated lightly around here," he said.

XXXXXXXXXX trash Alaska campsite

An Army

The 100-some soldiers from Fort XXXX in XXXXXXXXXX spent three weeks at the site in February as part of a cold-weather training exercise. They left behind a mess that included about 100 gallons of spilled diesel fuel, some of which made its way into nearby Willow Creek, as well as litter and human waste. A local resident reported the spill in late April after smelling fuel while riding his four-wheeler through the area, which is about 14 miles east of Willow

"We don't treat this lightly," Army spokesman Chuck Canterbury said. "This is not 20 years ago. Times have changed. A major portion of our mission now is taking care of the environment."

Capt. XXXXXXXX, a spokesman for the training Army unit, said he couldn't make any comments about what happened while it was under investigation. The unit, while based at Fort XXXXX, currently is stationed at Fort XXXX in Washington State.

"Luckily, we caught it before breakup," Young said. "If it had gone unreported, it could have flushed itself out."

"We were real surprised to see this," said Mike Sullivan, a land manager with the state Department of Natural Resources who issued the permit for the Army unit.

But in recent years the soldiers have done a good job of picking up after themselves, Sullivan said. One example is the Knik Glacier, where troops have trained for the past six years.

KEVIN POWELL/Anchorage Daily News

Those applying for this type of Army unit spend on the average two years before they're accepted to XXXXXXXXX. Lt. Col. XXXXX, the battalion commander, speaks four languages, Canterbury said.

Canterbury said the unit's soldiers dumped some of the fuel on waste they were trying to burn. The most polluted spots at the site are surrounded by fire rings, Young said.

"I can understand a little bit," Canterbury said. "It's 20 below, they're trying to pack and get out of there in a hurry. But hey, you know you do what you've got to do. That's part of the deal."

The unit could face a range of punishments, including having the cost of the cleanup taken out of its budget. Canterbury said that cost will run in the tens of thousands of dollars.

When asked whether the soldiers could be ordered on latrine duty or other hard labor, Canterbury quipped, "Maybe we should make them work in the motor pool for a week."

Thursday, July 24, 1997

XXXXXX Unit?

This group failed their responsibility

Elite Army soldiers who despoiled their winter site in the Hatcher Pass area in 1996 weren't looking ahead to spring. That's when a mess of spilled diesel fuel, human waste, and trash was revealed. It took roughly \$40,000 and four months to clean up after the XXXX XXXXX-based Army unit, who came north for a cold-weather training exercises.

The state allows the military to use its land for training exercises. The privilege is not taken lightly by troops stationed in Alaska...

These 100-some soldiers brought public embarrassment to their unit and the Army. Now comes word this month that two of their leaders appropriately face misdemeanor charges in state court for polluting the environment and failing to report a fuel spill as required by law.

The U.S. Army in Alaska deserves credit for making the best of a bad situation. The follow-up investigation even included Alaska's highest ranking Army officer donning hipboots to wade through the boggy abandoned campsite. It was Alaska-based soldiers, too, who had to clean up after their Lower 48 colleagues.

"Environmental stewardship is the order of the day and is part of the military's mission here, said Fort Richardson spokesman Chuck Canterbury. In fact, "You pop open a can of oil now, and there's an audit trail from the cradle to the grave," he added. The criminal environment stewardship shown by the XXXXXXXXXX of Fort XXXX's XX Battalion was a setback to the military's ongoing efforts.

The state allows the military to use its land for training exercises. The privilege is not taken lightly by troops stationed in Alaska, who in recent years have prided themselves on leaving behind a clean environment after field training. Surely if this Army unit returns to Alaska, its members will be extra careful in following the local's lead and clean up after themselves.

APPENDIX E

SPILL RESPONSE PLAN

The prevention of spills, and ultimately the response to a spill when prevention fails, should be included in every unit SOP. Every commander will be faced with the responsibility of preventing spills and with responding to a spill. Spills can occur in spite of best efforts. What must not happen is a failure to respond or failure to respond in a timely and adequate manner. Following are extracts from the FM 20-400/MCRP 4-11B sample unit environmental SOP which provides a spill-response plan, a list of spill equipment and materials, and the electronic spill report message format (defined in FM 101-5-2).

SPILL-RESPONSE PLAN

1. **IMMEDIATE ACTION.** A spill is defined as any quantity of petroleum product over five gallons (or according to local laws, since some states are more stringent) or any quantity of any other HW. Should a spill occur, the immediate actions are as follows:

a. Protect yourself.

- (1) Evacuate the area, if necessary, due to the type of spill.
- (2) Take personal precautions as detailed on the MSDS for the material spilled.
- (3) Use the proper PPE.
- (4) Extinguish smoking materials and all sources of ignition.
- (5) Turn off power if there is the possibility of fire.
- (6) Ventilate the area.

b. Stop the flow (do it **safely**).

- (1) Shut off valves, turn drums upright, and so forth, if possible.
- (2) Do not take unnecessary chances, but stop the flow if it is possible without injury or contamination.
- (3) Shower and change clothes as soon as possible if HW contamination occurs.

c. Contain the spill (**quickly** and **safely**).

- (1) Contain the spill by throwing absorbent, floor sweep, or dirt on it.
- (2) Make dams to keep the spill from spreading further, and do not let it enter storm, sewer drains, or other waterways.

(3) Divert the flow to prevent the spill from entering any water source, including drains, if containment is not possible.

d. Report the spill immediately.

(1) Report the spill to your superior.

(2) Sound the alarm or give verbal warning.

(3) Have another person call the installation's fire department while you continue to assess the size and severity of the spill.

(4) Immediately report to the unit ECO or the installation's environmental office spills of any HM other than a petroleum product, regardless of quantity.

(5) Make a copy of the pertinent MSDS for emergency-response personnel in the event of a reportable spill (if you are the senior person in charge).

e. Clean up the spill.

(1) Scoop up contaminated material and put it in a container. Mark the container with "Hazardous Waste, Contaminated Absorbent (Dirt)" if the spill occurred on concrete or asphalt and the spill was cleaned up with absorbent or dirt.

(2) Check with the unit supply sergeant or the DRMO for proper disposal.

f. Replace spill equipment.

(1) Immediately after a spill clean-up, the spill-response team's noncommissioned officer-in-charge (NCOIC) will account for all tools and supplies. The NCOIC will order replacement consumables (sweeping compound and rags) from unit supply. He will also identify missing property and initiate appropriate action (statement of charges or report of survey) to maintain accountability.

(2) The spill-response team's NCOIC will ensure that spill-kit inventories are complete before resealing the drums.

g. Maintain POC list for assistance (listed by office, name, telephone number, and building).

(1) Fire department.

(2) Installation's EMO.

(3) Unit's ECO.

2. RESPONSE AND CLEAN-UP INSTRUCTIONS.

- a. Take the immediate actions in paragraph 1 above.
- b. Ensure that any PPE specified in the MSDS is properly used.
- c. Transfer the fluid to a serviceable container if the container is still leaking fluid.
- d. Absorb the remaining spilled liquid with absorbent material. Use only the amount necessary to absorb the spill. If the spill is too large, take remedial action while waiting for the fire department.
- e. Clean up the material with a nonsparking shovel or broom, and place the residue in a serviceable container with a secure lid.
- f. Label the container.
 - (1) Label the container—"POL SPILL RESIDUE"—for fuel, oil, or hydraulic fluid spills.
 - (2) Label the container—" (Name of Chemical) SPILL RESIDUE - FLAMMABLE"—for flammable liquid spills (including solvents, paints, paint thinners, and alcohol).
 - (3) Label the container—" (Name of Acid) SPILL RESIDUE - ACID"—for acid spills.
- g. Store the container in the HW storage area while awaiting turn-in.
- h. Turn in the residue container to DRMO.

SPILL EQUIPMENT AND MATERIALS

Each unit or activity should maintain a spill kit to respond to accidental releases and spills of hazardous material. Below is a list of recommended equipment that should be maintained in the unit/activity spill kit. This list is not all inclusive and should be expanded depending on the mission. It is the responsibility of the unit/activity to purchase replacement or additional items for the kit or to purchase additional kits. Additional quantities will be based on the likely size or frequency of potential spillage.

HAZARDOUS MATERIAL/HAZARDOUS WASTES SUPPLIES

CONTAINERS (DOT or equivalent)

<u>NSN</u>	<u>ITEM</u>
8105-00-848-9631	Bag, polyolefin, 5 millimeters, 36 x 54 inch
8125-00-174-0852	Bottle, plastic, 1 gallon (polyethylene)
8125-00-731-6016	13 gallon
8125-00-888-7069	5 gallon
8110-00-254-5719	Drum, steel, 1 gallon*
8100-00-128-6819	1-gallon steel drum (17C)*
8110-00-254-5722	4-gallon steel drum*
8110-00-282-2520	5-gallon steel drum (17C)*
8110-00-254-5713	Drum, steel, 6 gallon (w/ring)*
8110-01-204-8967	Pail, shipping, steel, 5 gallon (DOT 17C)*
8110-00-519-5618	Drum, steel, 10 gallon (DOT 17C)*
8110-00-753-4643	19-gallon steel drum (17C)*
8110-00-366-6809	30-gallon steel drum (17C)*
8110-00-030-7779	30-gallon steel drum*
8110-00-030-7780	50-gallon steel drum (17C)*
8110-00-823-8121	55-gallon steel drum (17M)*
8110-00-030-9783	Drum, steel 55 gallon (bung & vent) (DOT 17E)*
8110-01-282-7615	Drum, polyethylene, 55 gallon*
8110-01-101-4055	85-gallon steel disposal drum (no lining)*
8110-01-101-4056	85-gallon steel recovery drum (epoxy phenolic lining)*
8110-01-101-4055	Drum, hazardous material*

ABSORBENT

<u>NSN</u>	<u>ITEM</u>
7930-00-269-1272	Clay, ground unit of issue (UI-bag)
1939-01-154-7001	Nonskid absorbent (UI-40 bag skid)
5640-00-801-4176	Insulation, thermal, vermiculite (UI-bag) (packing material)
4235-01-423-1466	4 each 1 cubic foot bag
4235-01-423-0711	1 each 1 cubic foot bag
4235-01-423-1463	30 each 18 x 18 inch pillows
4235-01-423-1467	20 each 2 inch x 10 foot sock
4235-01-423-1465	10 each 4 inch x 8 foot booms
4235-01-423-2787	10 inch x 10 foot booms

SPILL PREVENTION

<u>NSN</u>	<u>ITEM</u>
8135-00-579-6491	Plastic sheet, clear
8135-00-579-6492	Plastic sheet, black
4235-01-423-7214	Spill kit
4235-01-423-7221	Spill kit

* Refers to open top containers.

For bung container refer to federal logistics (FEDLOG) or contact your G-4.

ELECTRONIC SPILL REPORT MESSAGE REPORT

TITLE: SPILL REPORT (SPILLREP)

REPORT NUMBER: S055

GENERAL INSTRUCTIONS: Used to send timely information or status of an oil, hazardous material, or hazardous waste spill that could have immediate environmental and/or health effects. Sent in accordance with commander's direction. **NOTE: Spill reporting and reportable quantities are mandated by federal and local law.**

LINE 1—DATE AND TIME _____ (DTG)

LINE 2—UNIT _____ (Unit making report)

LINE 3—DATE/TIME _____ (DTG of spill discovery)

LINE 4—MATERIAL _____ (Material spilled)

LINE 5—QUANTITY _____ (Quantity of spilled material)

LINE 6—LOCATION _____ (UTM or six-digit grid coordinate with
MGRS grid zone designator of spill)

LINE 7—CAUSE _____ (Cause and supervising unit)

LINE 8—SIZE _____ (Size of affected area)

LINE 9—DAMAGE _____ (Damage to the natural environment,
if required)

LINE 10—HAZARDS _____ (Hazards to friendly forces and/or
civilian personnel)

LINE 11—ACTIONS _____ (Summary of actions taken)

LINE 12—UNIT POC _____ (Supervising unit POC)

LINE 13—ASSISTANCE _____ (Assistance required/requested)

LINE 14—NARRATIVE _____ (Free text for additional information
required for clarification of report)

LINE 15—AUTHENTICATION _____ (Report authentication)

APPENDIX F

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<http://aec-www.apgea.army.mil:8080/> 1-800-872-3845 (CONUS)

Dial the access code for the US, then 1-410-671-1699 (OCONUS), DSN 584-1699 (from OCONUS, first dial the US DSN area code).

For other POCs see Appendix J of FM 20-400/MCRP 4-11B.